Geographic Information System-based
Safety **A**nalysis, **V**isualization, and **E**xploration **R**esource
(GIS-**SAVER**)
for
Engineering, Enforcement, Education, Emergency Response, and Everyone else!
(GIS-**SAVER**:E^5)

**Iowa Department
of Transportation**
**Highway Division, Engineering Bureau,
Office of Traffic and Safety**

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IA 127

MP 5.66 to MP 15.3

Harrison County

2001-2005

Table of Contents

SAVER Example

District 4 requested a crash history on Iowa 127 from milepost 5.66 to milepost 15.3. Consulting a map, this section of road was determined to be in Harrison County. They did not indicate what years of data they were interested in but the most recent 5 years available (e.g., 2001-2005) is a standard request. No query was asked for, they did not indicate which reports they wanted, nor did they request a stack; therefore, the normal reports that are requested will be run and a stack that communicates location and severity will be produced. This may be overdoing it and it might normally pay to ask.
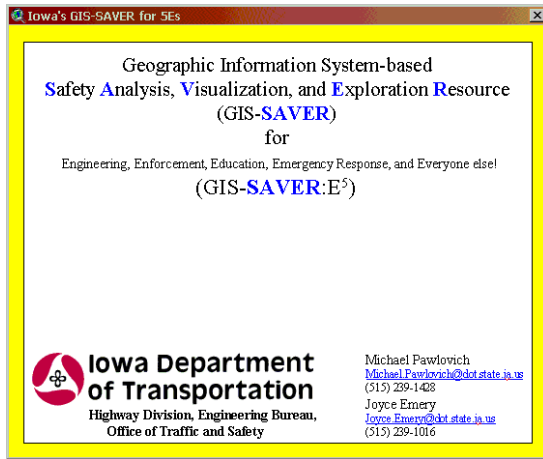
Step 1: Open the SAVER Project

Open SAVER.
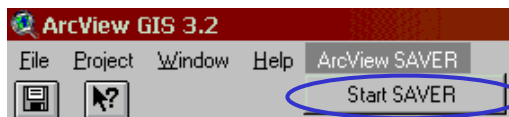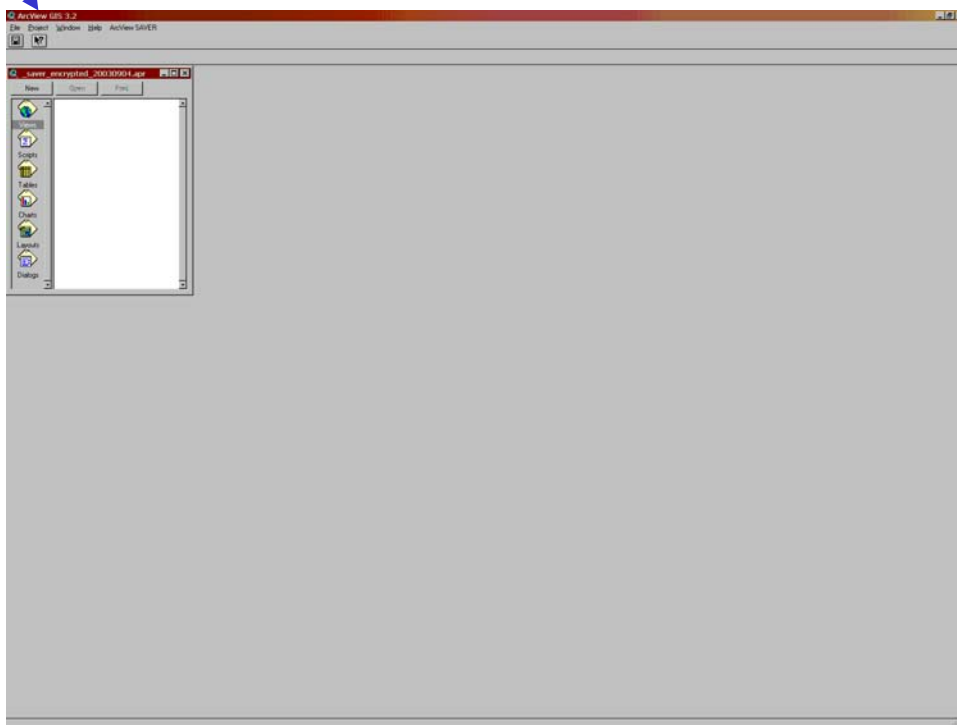
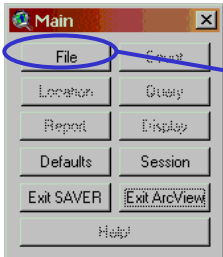**Start SAVER.**

Open New Map

SAVER Example

Iowa's GIS-SAVER for 5Es

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The splash screen and about dialog open.

About Iowa's GIS-SAVER for 5Es

Iowa's GIS-SAVER

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Continue >>

Click Continue.

Main
File | Setup
Location | Query
Report | Display
Defaults | Session
Exit SAVER | Exit ArcView
Help

Click File.

Answers
OK | Cancel
Back | Next
Print | Print Setup
Clear | All
Main Dialog

File Commands
Maps
New | Select
Save | Load
Close | Hide
Tables
Theme Tables | Select
Save | Load
Close | Hide
Projects
Save | Open

Answers
OK | Cancel
<< Back | Next
Print | Print Setup
Clear | All
Main Dialog

Click New in the Maps control panel.

New Map
City | County
MPO | RPA
Iowa DOT District
Iowa State Patrol District
Statewide | Corridor

Answers
OK | Cancel
<< Back | Next
Print | Print Setup
Clear | All
Main Dialog

Click County.

SAVER Example

A list of the counties available on your computer will appear.
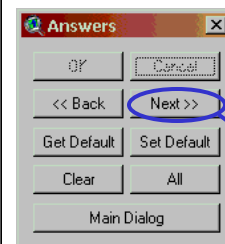
Select the County: Harrison.

Click Next.

SAVER Example

**A list of the years of data available
on your computer will appear.**

Choose 2001-2005.

**A map will be drawn showing the county(ies) you selected with
the years of data you requested: Harrison 2001-2005.**
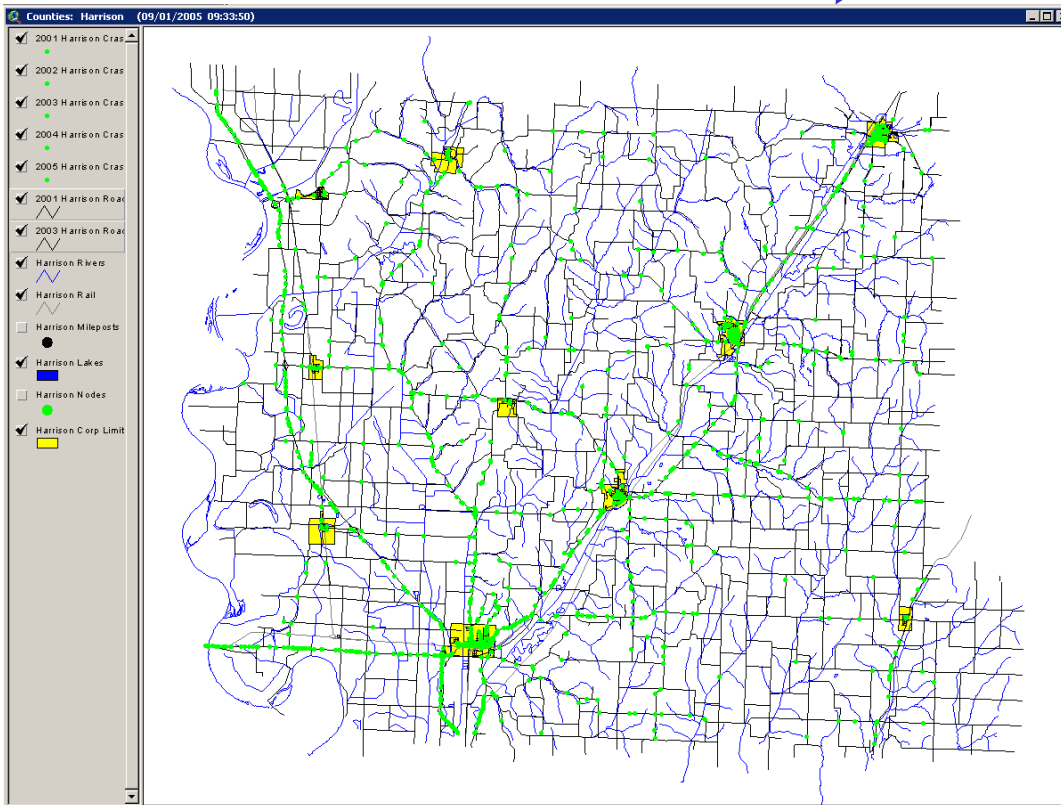
**Next: Unless you know where IA 127
is on this map, you must find it.**

Find Location

SAVER Example

Click the Query Builder tool button, a query builder window will open. Make sure the active theme(i.e.. Harrison Roads) is the one you want to query first.
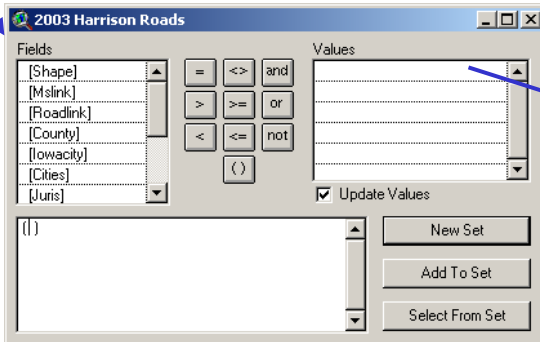
Construct the query. (see Note)
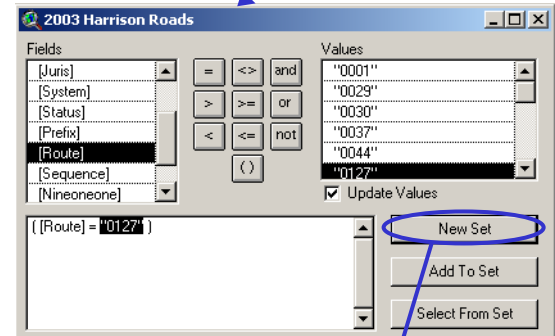
Note: Double-click on Route, then single-click on the "=" (equals) button, then double-click on the proper value for the route → 0127. The query formed should be ([Route] = "0127"). It is important that the syntax is exactly this.

In some cases the values don't appear. If not, type the route number within quotes and with leading zero(es).

Click New Set.
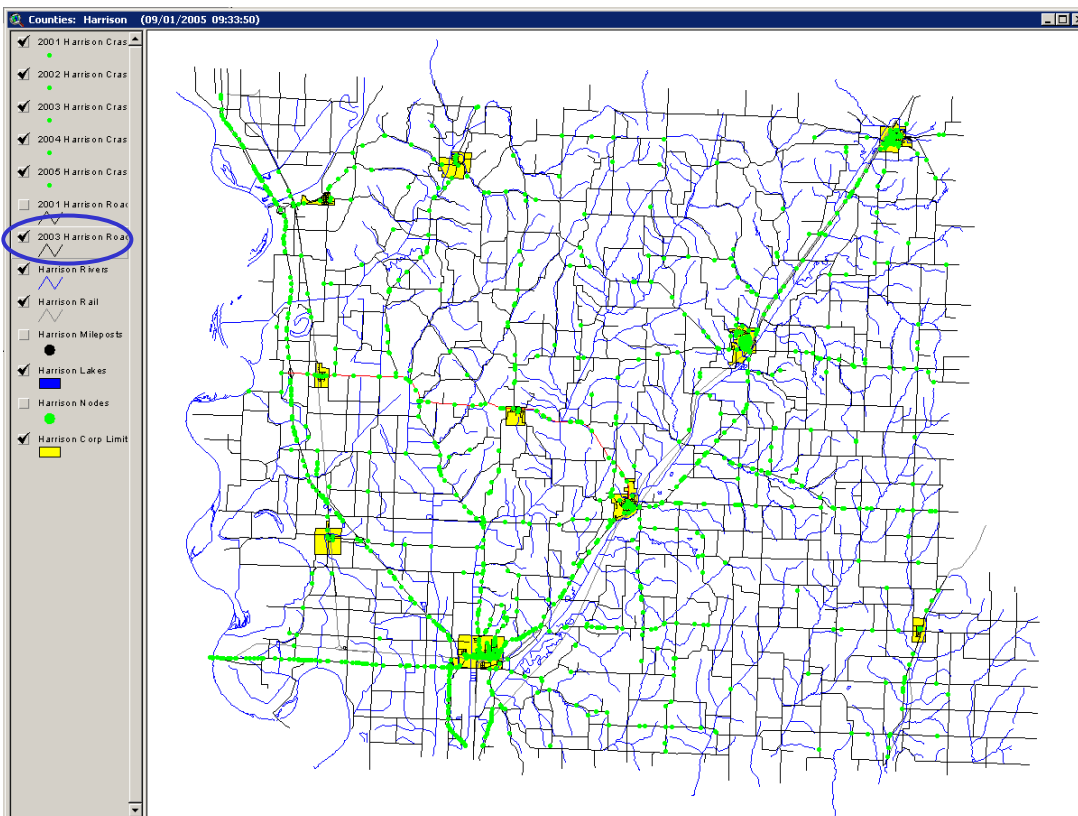
Next step: Zoom to extent to see more detail.

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SAVER Example

**Click the Zoom to Selected Features
of Active Themes button.**
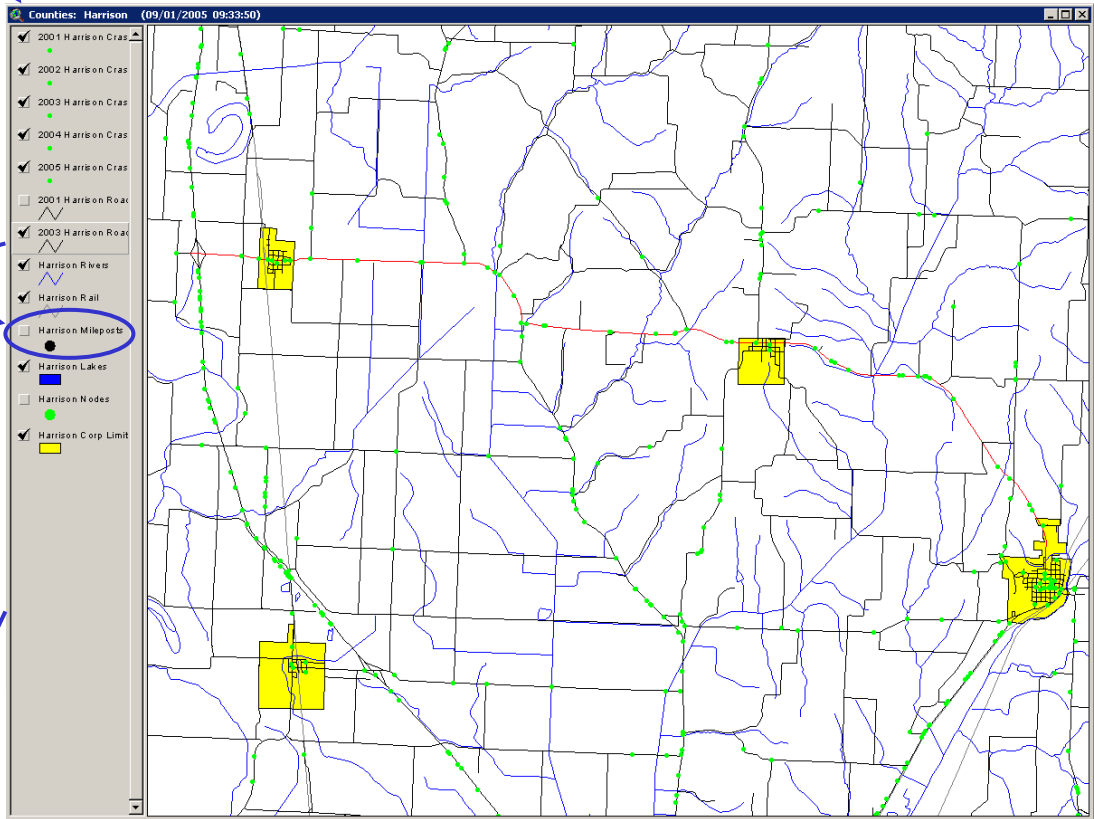
**Set the active
theme to be
mileposts and
make visible.**

**You will be
querying the
mileposts.**

Counties: Harrison   (09/01/2005 09:33:50)

- 2001 Harrison Cras
- 2002 Harrison Cras
- 2003 Harrison Cras
- 2004 Harrison Cras
- 2005 Harrison Cras
- 2001 Harrison Road
- 2003 Harrison Road
- Harrison Rivers
- Harrison Rail
- Harrison Mileposts
- Harrison Lakes
- Harrison Nodes
- Harrison Corp Limit

**Click the Query Builder tool button again. The query
builder dialog for Harrison Mileposts should appear.**

Harrison Mileposts

Fields
- [Shape]
- [St_rte]
- [Rev]
- [Milepost_n]
- [Dup]

Buttons: = <> and > >= or < <= not ( )

Values

☑ Update Values

(|)

New Set
Add To Set
Select From Set
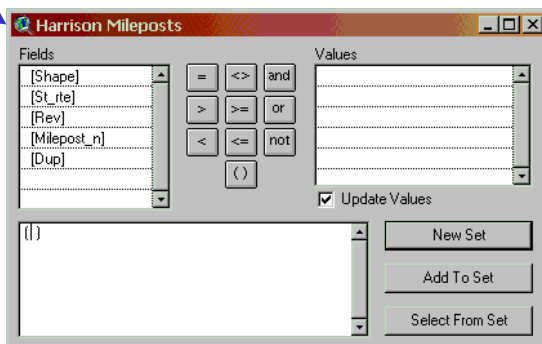
**Construct the query.
(see Note on next page)**

SAVER Example

Note: Double-click on Route, then single-click on the "=" (equals) button, then double-click on the proper value for the route → 0127. Single-click the "and" button. Another set of parentheses will appear with the cursor blinking between them. Double-click on Milepost, then single-click on the ">=" button, then double-click on the milepost to the lower side of the desired length → 5. Single-click the "and" button. Another set of parentheses will appear with the cursor blinking between them. Double-click on Milepost, then single-click on the "<=" button, then double-click on the milepost to the higher side of the desired length → 16. The query formed should be ([Route] = "0127") and ([Milepost] >= 5) and ([Milepost] <= 16). It is important that the syntax is exactly this.

In some cases the values don't appear. If not, type the values as either numbers or strings, as indicated.

Click New Set.

Next step: Use the info tool to determine which is MP 5 and which is MP 16.

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Click the Info tool button. Then click on a milepost on the map.

1: Harrison Mileposts - 0127	Shape	Point
	Route	0127
	Milepost	5

Clear   Clear All
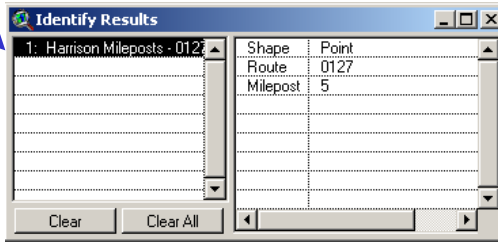
A listing of the attributes for the features clicked on from the active themes will appear.

Determine what the mileposts on either end of the project zone are. One should be MP 5, the other should be MP 15. There is no MP 16.

Click the Measure tool button. Click in the center of MP 5, release, drag the mouse down the roadway, click each time you wish to establish another vertice. The individual segment length and the total line length are shown in the lower left of the ArcView window. Progress until 0.66 miles are indicated. Double-click to end. Remember the point for the next step. BTW…the degree of accuracy you go to is defined by how well you follow the road. In this case, accuracy is not so important as no crashes are near the point. Other times, accuracy will be more important!!!

Click the Draw Point tool button. Then click at the location just determined (i.e., the MP 5.66 point).

Finally, crash selection!
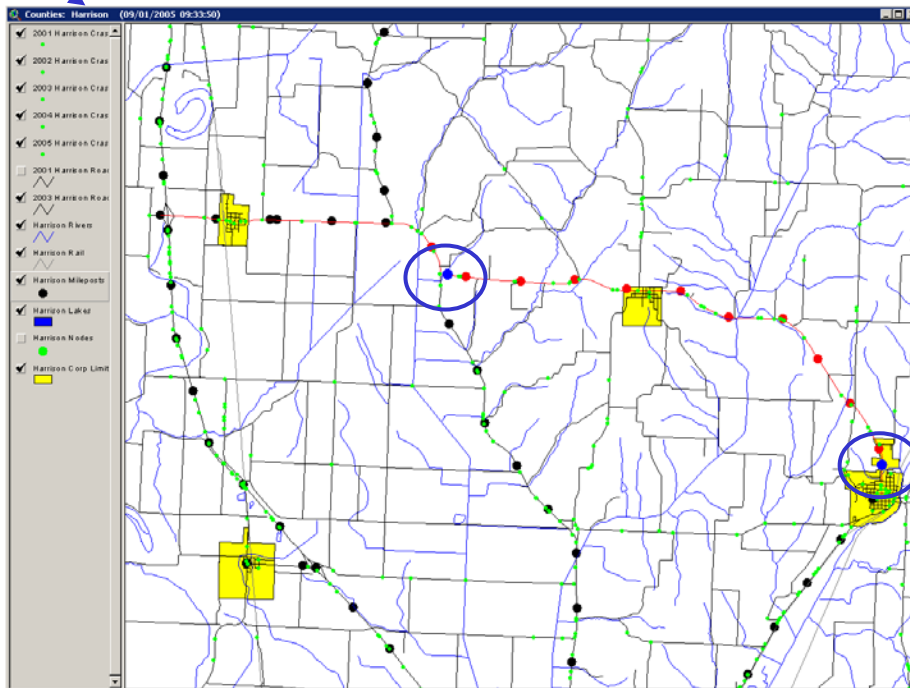
Repeat the measuring and point placement for MP 15.3

Note: The only reason you're placing these points is to help in visualization of the end points. If you don't need this information, you may skip this step and progress to the next.

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Select Crashes

SAVER Example

First, click the Zoom to Selected Features of Active Themes button. This should zoom the map in to the area of most concern.
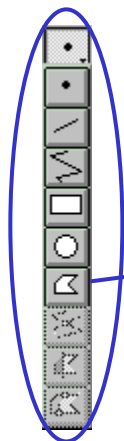
Then, click and hold on the Draw Point tool button. Other shape options will appear.

Click the Draw Polygon option
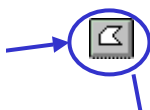
Begin drawing Polygons which encircle the area. You may draw multiple Polygons. To draw a polygon, single-click on the map at the start point, then move the mouse to the next vertex, single-click. Keep doing this until you have defined all corners of the polygon. As you do this, a polygon will be displayed, use it for visualization. Proceed along one side of the road, cross, then return along the other side of the road. Double-click to end the polygon.
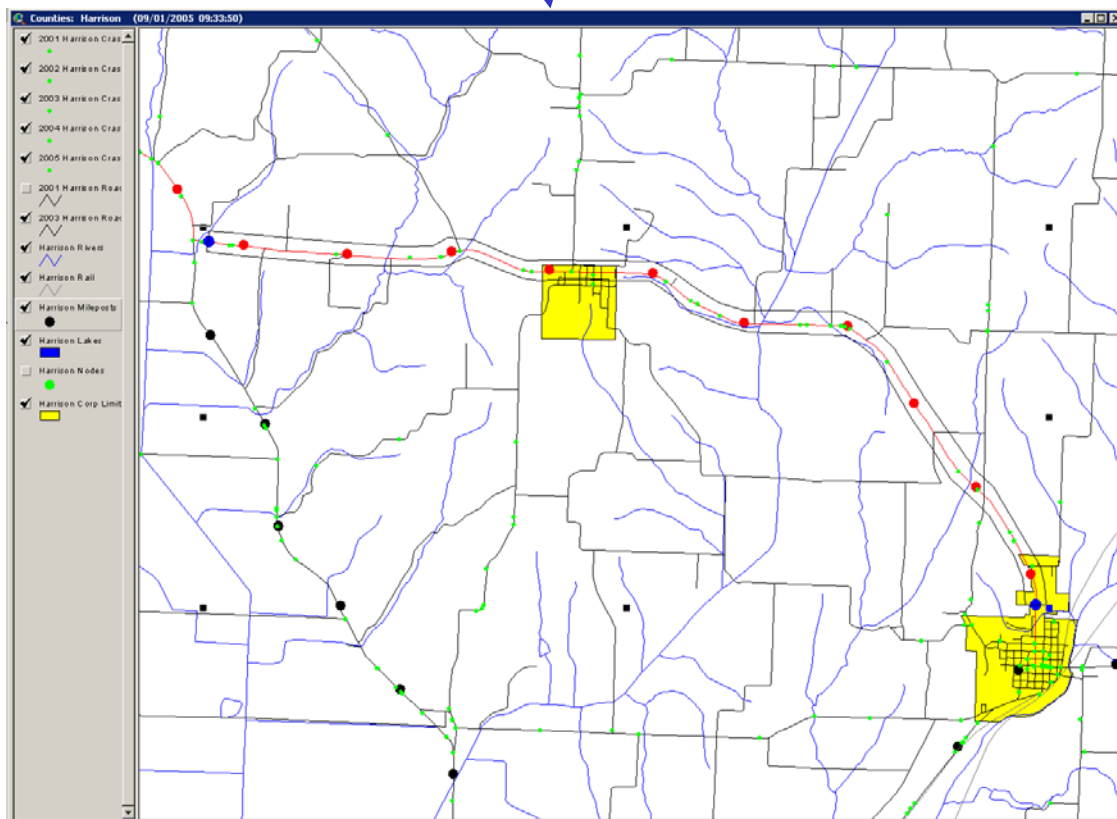
Draw sufficient polygons to define the entire area.

For display purposes, you can thicken the perimeter.

SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005

**First, we need to select a graphic to thicken. Click the Pointer tool button, move to the perimeter of the graphic and click. The graphic should have selection boxes appear at its "virtual" extent. Now, double-click on the edge of the polygon.
The Fill Pallette window should appear.**
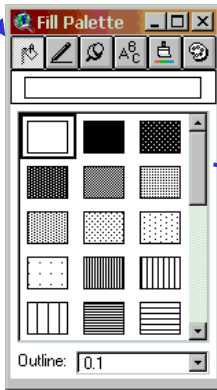
Change the outline value to 2 or 3.
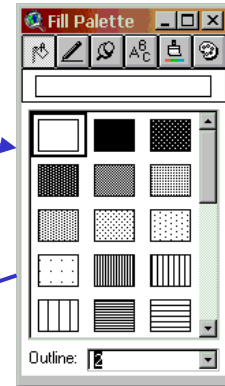
The polygon will become more visible.
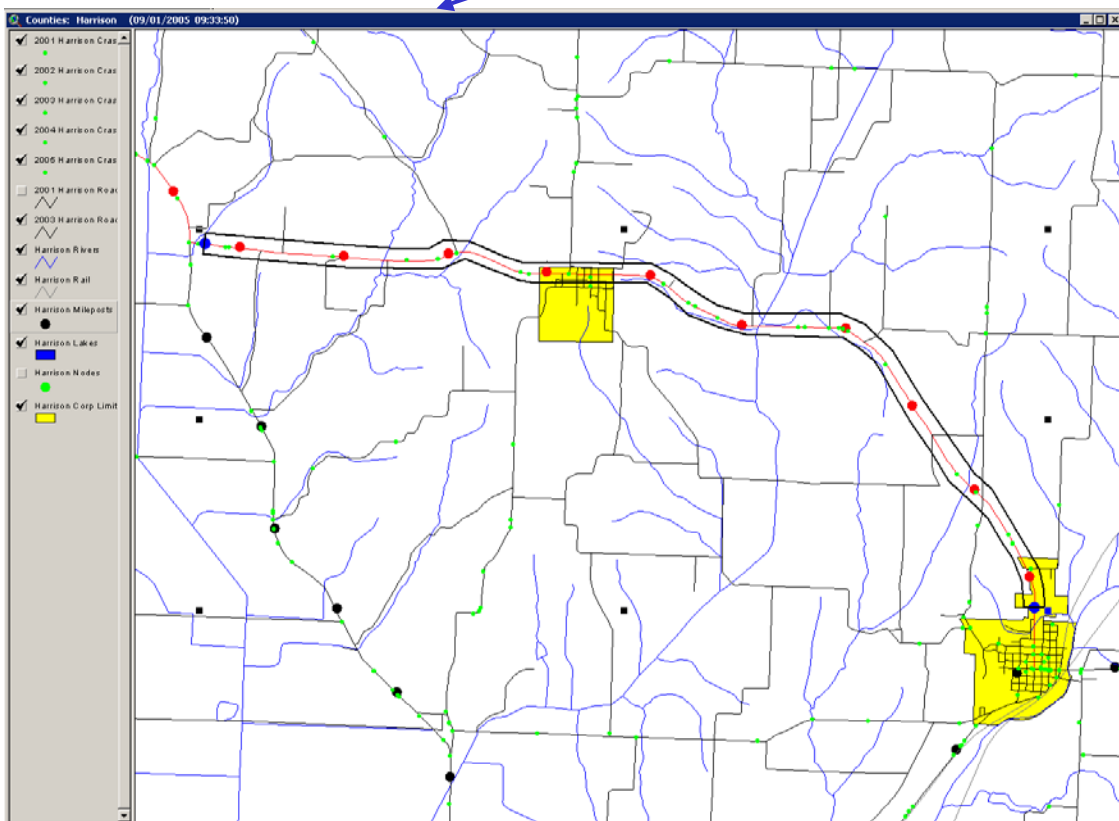
Repeat this for all polygons.

When done, draw a large box that encompasses all polygons. This will select all of them. Set the crash themes active.

To set the crash themes active, as shown in the figure below, there are multiple options.
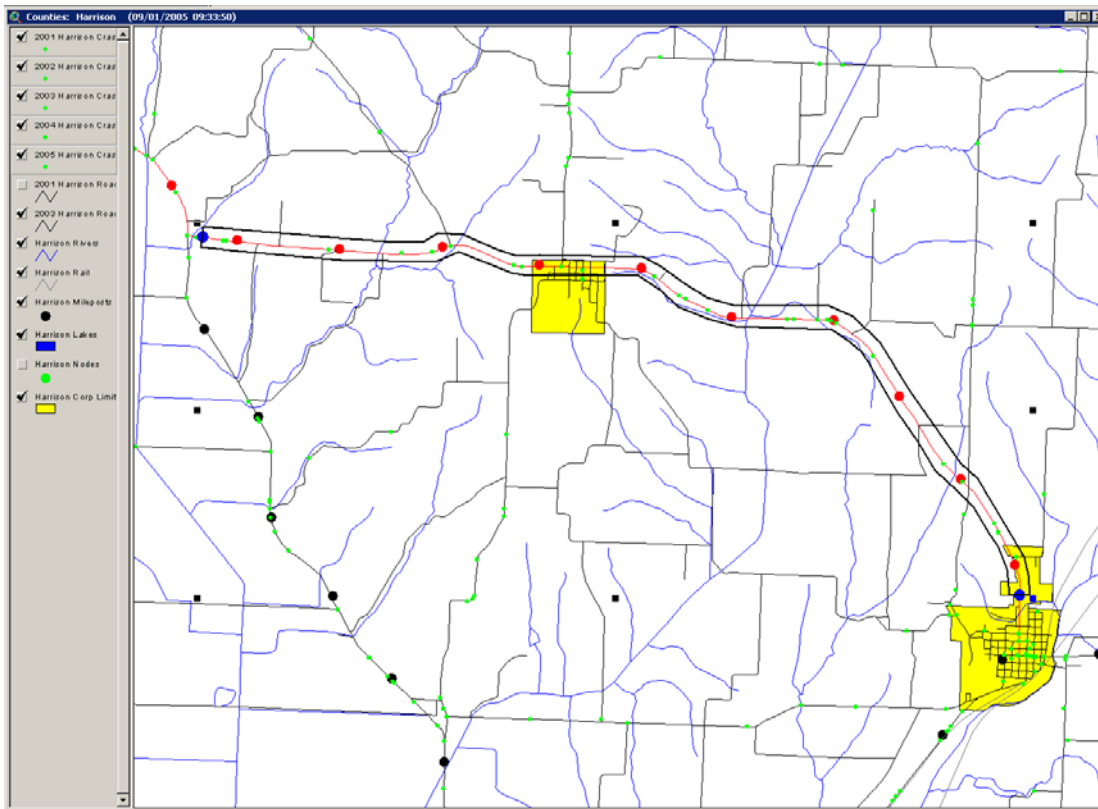
One option is to click on the theme names, holding the Shift Key down to select multiple. This is the easiest option if only one or two counties are open. If more than that are open, shift clicking will have to be done numerous times.

Alternatively, you can use the following procedure to set multiple counties active simultaneously.

Click Display on the Main Dialog.

Click All Data in the Activate/Show control panel on the Display dialog.

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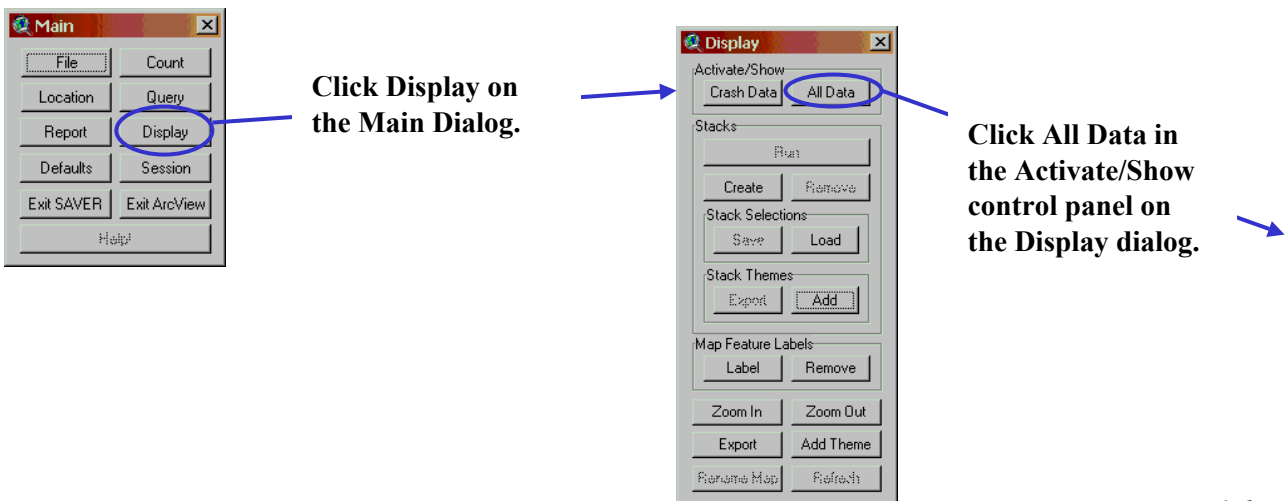
SAVER Example
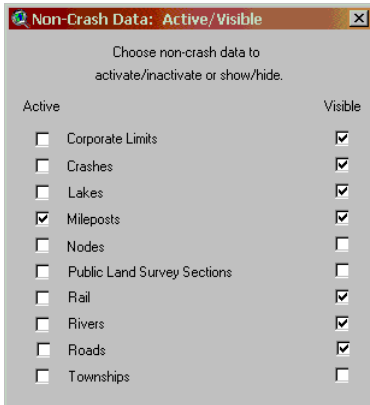
A dialog that displays the current activation and visibility settings for each theme type appears.

Change the choice from Mileposts to Crashes.
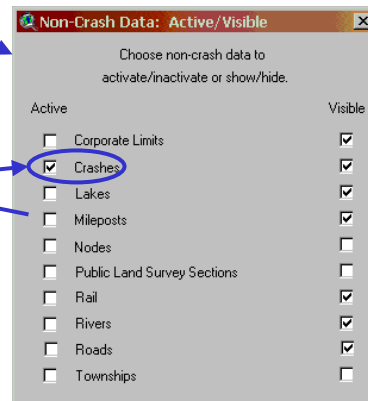
Clicking next after the change has been made will cause all crash themes to become active and all other themes to become inactive.
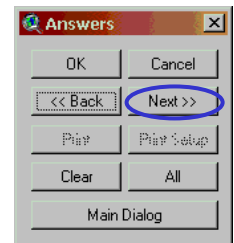
Select Features Using Graphic

Clicking on the Select Features Using Graphic button while the graphic(s) are selected and the crash themes are active will result in the selection of crashes within or touching the graphic(s).
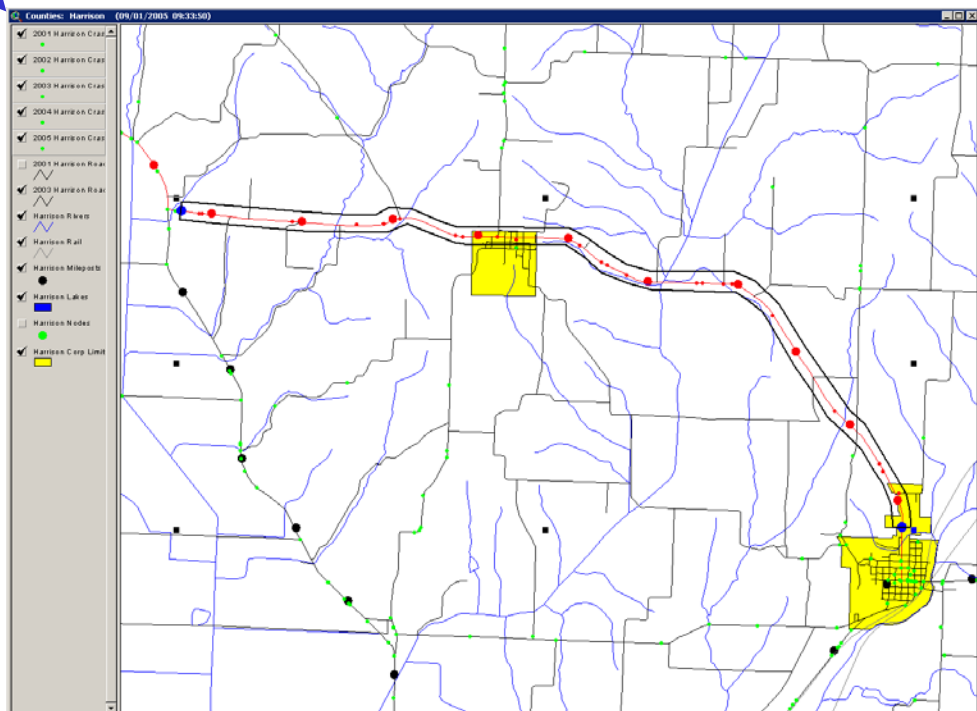
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Save Project

File Edit View Theme Gra
Close
Close All
Set Working Directory...
Save Project   Ctrl+S
Save Project As...
Extensions...
Print...
Print Setup...
Export...
Manage Data Sources...
Exit
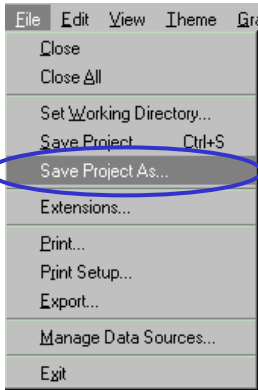
Periodically saving your work is a good idea. Occasionally, something will cause ArcView to shut down. If you haven't saved, your work will be wasted. To save an ArcView SAVER project, locate the File menu in the upper left of the ArcView window. Click on File and the menu will expand.

Click on Save Project As…
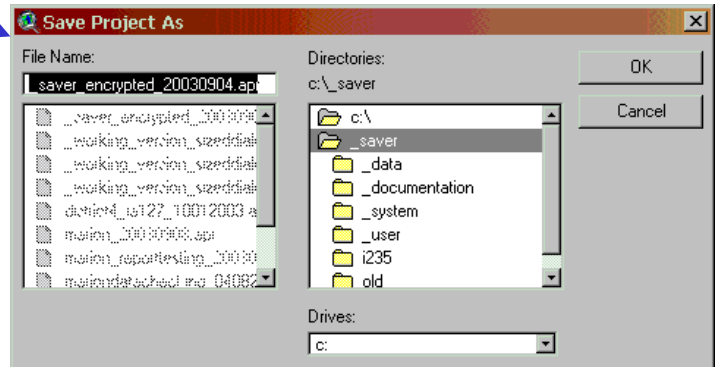
The Save Project As dialog appears with the name of the SAVER project visible and highlighted. Type in some other name which describes your current project. Updating the date may help you recall, months from now, what the project was.

Note: Clicking Save Project from the File menu or leaving the file name the same will overwrite the SAVER project. This will cause the current views, tables, etc. in the project to open the next time you open SAVER.

Note: Please only save the projects within the _saver directory. Saving them somewhere else could cause problems.

For this example, type in "district4_ia127_<date>", where <date> is the current day's date.
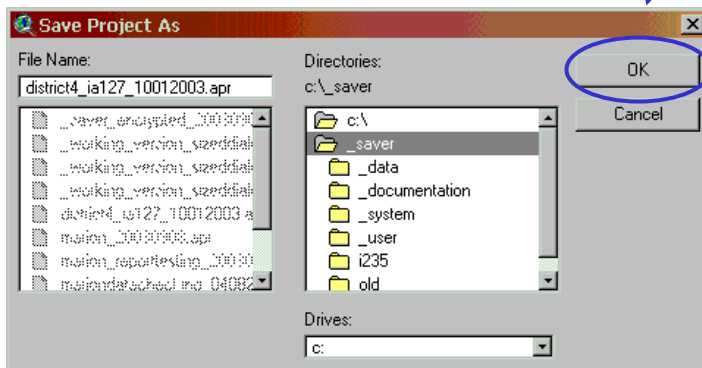
When finished, Click OK and the project will save.

Note: To open this project later, first open the SAVER project, then choose the File menu, click on Open Project (available when the project window within ArcView is active), and locate your project file.

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Count Crash Frequencies, Severities, and Injuries

SAVER Example
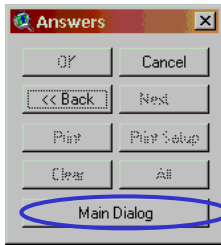
Answers dialog:

- OK / Cancel
- << Back / Next
- Print / Print Setup
- Clear / All
- Main Dialog

A quick report of crash frequencies, crash severities, and injury severities may be obtained.

If not already at the Main dialog, go there. To do this easily, click on the Main Dialog button on the Answers dialog.

Main dialog:

- File / Count
- Location / Query
- Report / Display
- Defaults / Session
- Exit SAVER / Exit ArcView
- Help

Click the Count button.

Location Description

Enter location description:

First Line: [   ]

e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line: [   ]

e.g., "for the intersection of" or "for the link between"

Third Line: [   ]

e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line: [   ]

e.g., "in Bremer Co., Iowa" or "(Fatal and Injury Crashes)"

Note: None of these lines are required. Suggestions are provided below each line.

Enter a description. Suggestions are made. This step is optional but advised.

Location Description

Enter location description:

First Line: [2001-2005 Crash History]

e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line: [for IA 127 from]

e.g., "for the intersection of" or "for the link between"

Third Line: [MP 5.66 to MP 15.3]

e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line: [in Harrison Co., Iowa]

e.g., "in Bremer Co., Iowa" or "(Fatal and Injury Crashes)"

Note: None of these lines are required. Suggestions are provided below each line.

Answers dialog:

- OK / Cancel
- << Back / Next >>
- Get Default / Set Default
- Clear / All
- Main Dialog

Click Next.

SAVER Example

Feature Count

The count of selected features from the active themes:

```
Feature Count Report (Thursday, September 1, 2005 1:06:27 PM Central Daylight Time)
    produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
    by:
       Michael D. Pawlovich
       Traffic Safety and Crash Analysis Engineer
       Iowa Department of Transportation
       Highway Division, Engineering Bureau, Office of Traffic and Safety
       800 Lincoln Way
       Ames, Iowa 50010

for:
    2001-2005 Crash History
    for IA 127 from
    MP 5.66 to MP 15.3
    in Harrison Co., Iowa

for years:
    2001
       Harrison
         Crashes: 6  Fatal: 0  Major: 0  Minor: 1  Possible/Unknown: 0  PDO: 5
         Injuries: 1  Fatal: 0  Major: 0  Minor: 1  Possible: 0  Unknown: 0
    2002
       Harrison
         Crashes: 10  Fatal: 0  Major: 0  Minor: 2  Possible/Unknown: 1  PDO: 7
         Injuries: 3  Fatal: 0  Major: 0  Minor: 2  Possible: 1  Unknown: 0
    2003
       Harrison
         Crashes: 4  Fatal: 0  Major: 0  Minor: 0  Possible/Unknown: 2  PDO: 2
         Injuries: 4  Fatal: 0  Major: 0  Minor: 0  Possible: 4  Unknown: 0
```

After a bit of computer time, a Feature Count report appears. This report shows the date and time of creation, which program was used, the analyst contact information, the location, and a year by year, county by county breakdown of the crash history. A total for all years and all counties is shown at the bottom.

Answers

OK   Cancel
Back   Next >>
Print   Print Setup
Clear   All
Main Dialog
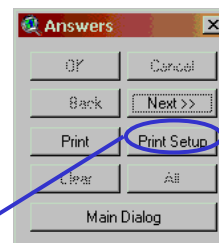
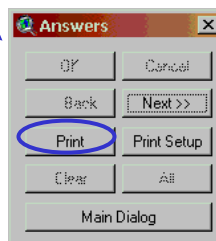**To print this using ArcView's limited print options, first click the Print Setup button on the Answers dialog. The print setup should direct you to the default printer for your computer. Change whatever needs changing.**
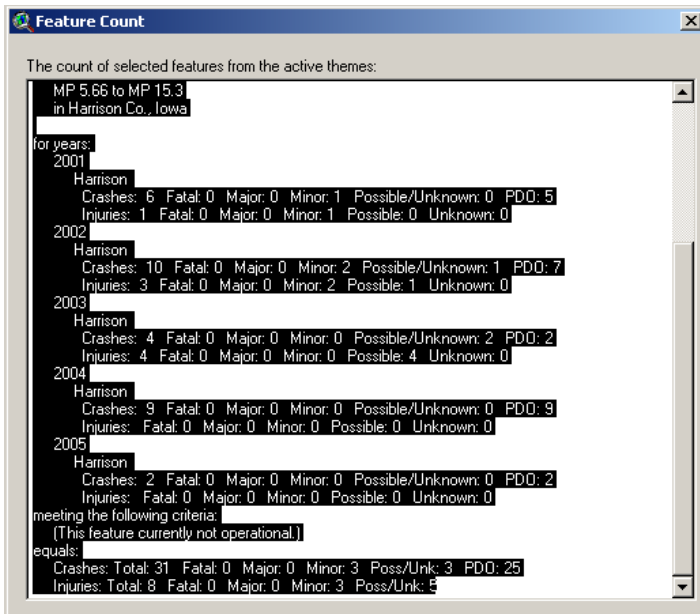
Print Setup

Printer

Name:	Fax
Status:	Ready
Type:	Windows NT Fax Driver
Where:	MSFAX:
Comment:	

Properties...

Paper

Size: Letter
Source: Default

Orientation

○ Portrait
○ Landscape

Network...   OK   Cancel
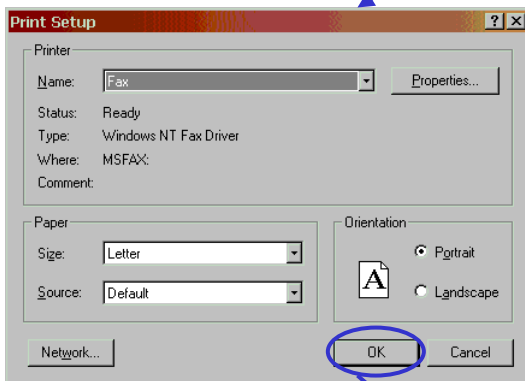
Note: ArcView's print options are fairly limited and subject to changes in screen resolution. An alternate option, presented on the next page is to copy and paste the text from the Feature Count report into a word processor (e.g., Word). This allows the analyst more printing and formatting options.

Click OK.

Answers

OK   Cancel
Back   Next >>
Print   Print Setup
Clear   All
Main Dialog

Click Print.

OR

Feature Count

The count of selected features from the active themes:

MP 5.66 to MP 15.3
in Harrison Co., Iowa

for years:
  2001
    Harrison
      Crashes: 6 Fatal: 0 Major: 0 Minor: 1 Possible/Unknown: 0 PDO: 5
      Injuries: 1 Fatal: 0 Major: 0 Minor: 1 Possible: 0 Unknown: 0
  2002
    Harrison
      Crashes: 10 Fatal: 0 Major: 0 Minor: 2 Possible/Unknown: 1 PDO: 7
      Injuries: 3 Fatal: 0 Major: 0 Minor: 2 Possible: 1 Unknown: 0
  2003
    Harrison
      Crashes: 4 Fatal: 0 Major: 0 Minor: 0 Possible/Unknown: 2 PDO: 2
      Injuries: 4 Fatal: 0 Major: 0 Minor: 0 Possible: 4 Unknown: 0
  2004
    Harrison
      Crashes: 9 Fatal: 0 Major: 0 Minor: 0 Possible/Unknown: 0 PDO: 9
      Injuries: Fatal: 0 Major: 0 Minor: 0 Possible: 0 Unknown: 0
  2005
    Harrison
      Crashes: 2 Fatal: 0 Major: 0 Minor: 0 Possible/Unknown: 0 PDO: 2
      Injuries: Fatal: 0 Major: 0 Minor: 0 Possible: 0 Unknown: 0
meeting the following criteria:
  (This feature currently not operational.)
equals:
  Crashes: Total: 31 Fatal: 0 Major: 0 Minor: 3 Poss/Unk: 3 PDO: 25
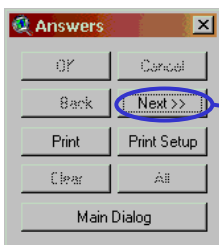 Injuries: Total: 8 Fatal: 0 Major: 0 Minor: 3 Poss/Unk: 5

To utilize an optional printing method, begin by highlighting the entire text within the Feature Count report.

To copy the highlighted text, hold down the CTRL key on the keyboard and depress the C key. This copies the text into the computer's clipboard.
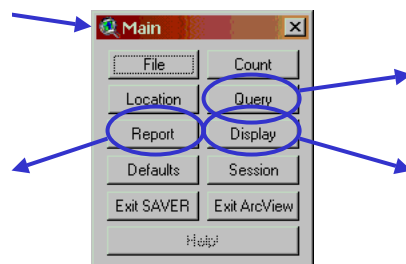
W Microsoft Word

Open your word processor (e.g., Word) and either use the Edit > Paste option (available via the menu or with a right click on the mouse) or hold down the CTRL key and depress the V key. This pastes the text into the active window.

Reformatting, saving, printing, and other options are now available via the word processor.

Answers

OK | Cancel
Back | Next >>
Print | Print Setup
Clear | All
Main Dialog

When done, click the Next >> button to return to the Main dialog.

Main

File | Count
Location | Query
Report | Display
Defaults | Session
Exit SAVER | Exit ArcView
Help

Now, options like Querying, Reporting, or altering the map Display are available to you. Each of these is optional.

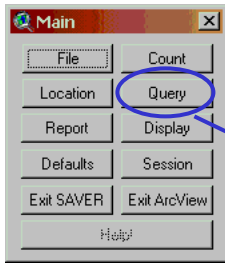**Actually, the Count option was optional as well.**
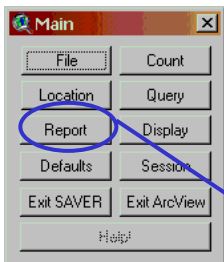
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# Queries and Reports

SAVER Example

To begin a query, begin at the Main dialog and click the Query button. However, as this was not requested, this step can be skipped. All possible crash attribute values are included by default. Querying limits these values to selected choices.
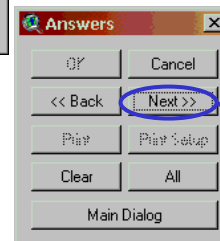
Not requested.

To begin a report, begin at the Main dialog and click the Report button. Reports list a variety of details or summarizations of the data, depending on user selections.
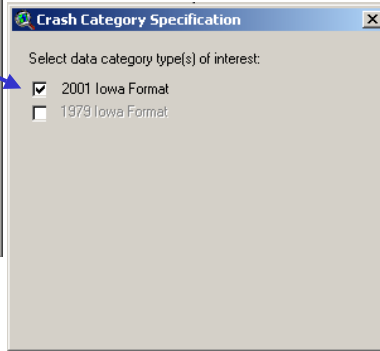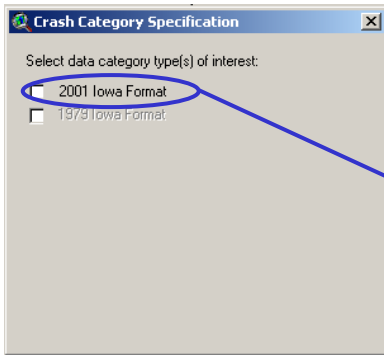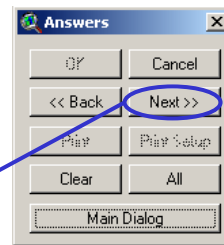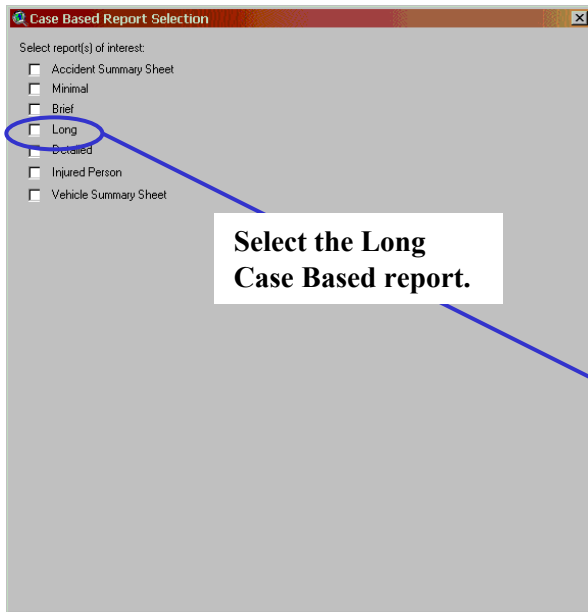
Click Report.
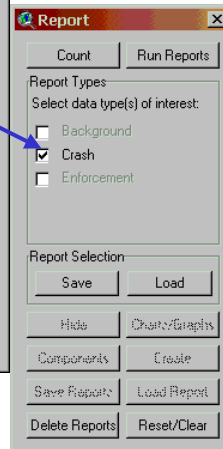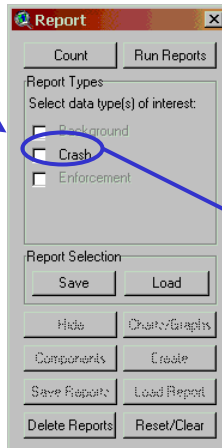
Select Crash.

Click Next.

SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005

Crash Category Specification

Select data category type(s) of interest:

☐ 2001 Iowa Format
☐ 1979 Iowa Format

Crash Category Specification

Select data category type(s) of interest:

☑ 2001 Iowa Format
☐ 1979 Iowa Format

Select the appropriate crash report form(s). 2001 Iowa Format is valid from 2001 thru 2005 and that is what we have for this example. Both report forms could be selected if data older and newer than 2001 were available. The reports for each format ARE different.

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click Next.

2001 Iowa Format Report Types

Select report type(s) of interest:

☐ Case Based
☐ Year Based

2001 Iowa Format Report Types

Select report type(s) of interest:

☑ Case Based
☑ Year Based
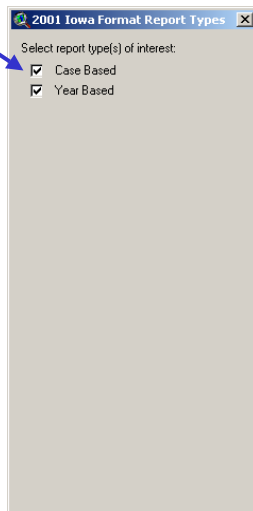
Select the report type(s) of interest. Case Based reports list a variety of details about each case, depending on which Case Based report is selected. Year Based reports summarize a particular attribute by year. These reports list the number of crashes with the attribute included and report crash severity and injury severity information.
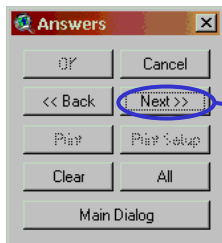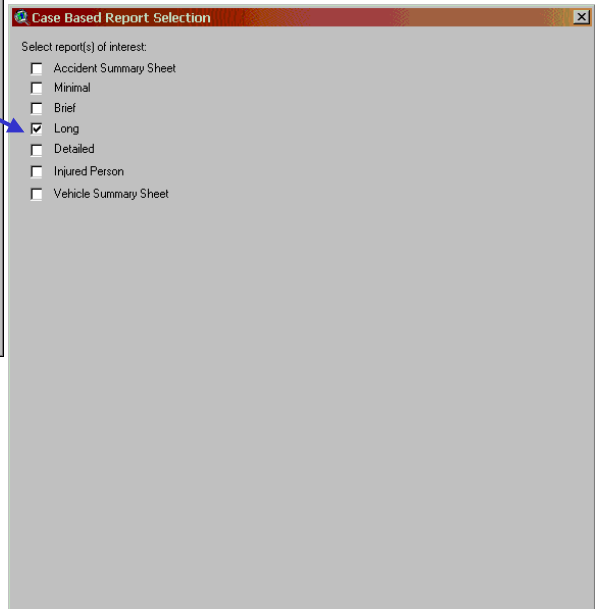
Select both types of reports.

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click Next.

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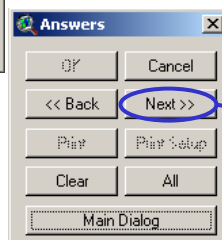
SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005

Case Based Report Selection

Select report(s) of interest:
- ☐ Accident Summary Sheet
- ☐ Minimal
- ☐ Brief
- ☐ Long
- ☐ Detailed
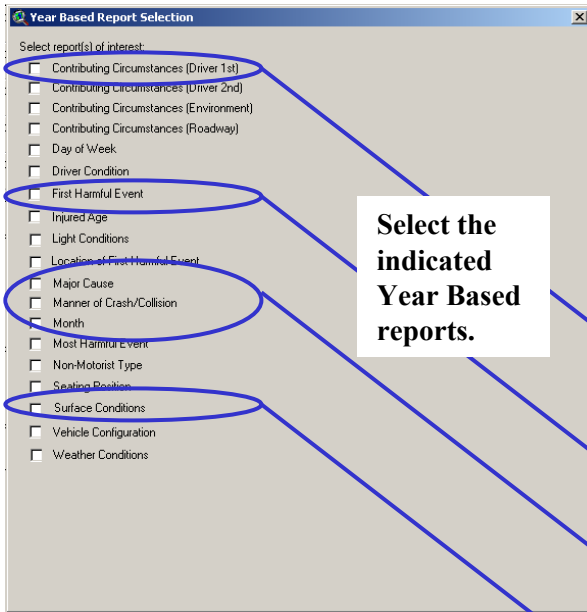- ☐ Injured Person
- ☐ Vehicle Summary Sheet

Case Based reports list different amounts of information and this is somewhat indicated by their names. Minimal reports list the least information and Detailed reports list the most. Brief and long list an amount of information between these two. The other reports are used for specific cases within the Iowa DOT Office of Traffic and Safety (TAS).

Select the Long Case Based report.

Case Based Report Selection

Select report(s) of interest:
- ☐ Accident Summary Sheet
- ☐ Minimal
- ☐ Brief
- ☑ Long
- ☐ Detailed
- ☐ Injured Person
- ☐ Vehicle Summary Sheet

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click Next.

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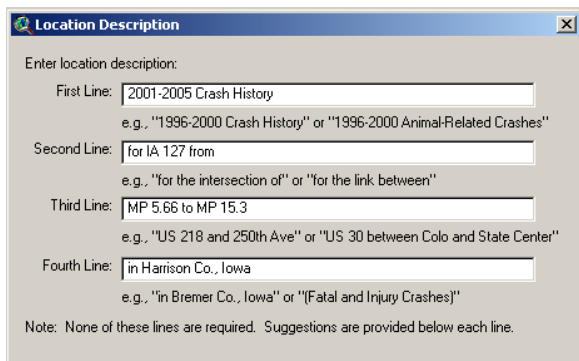
SAVER Example

Year Based reports summarize specific types of attributes. These types are indicated by the names. Select the indicated Year Based reports. Select whatever reports are deemed necessary for the location.
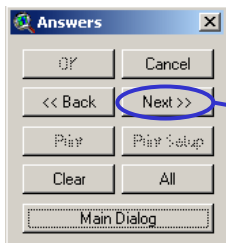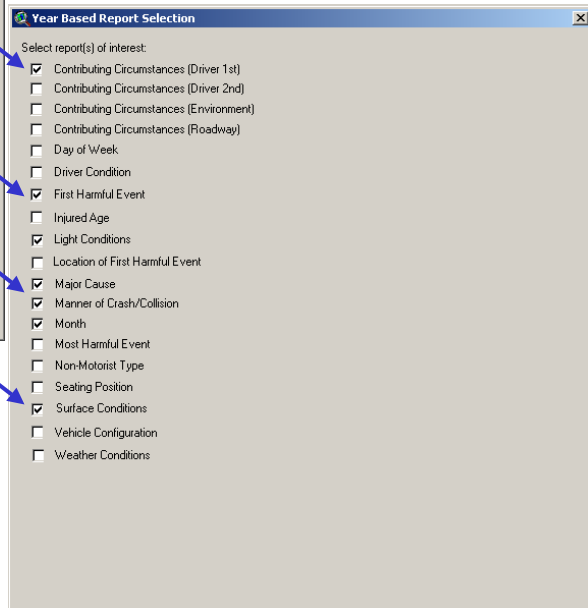
Select the indicated Year Based reports.

Click Next.

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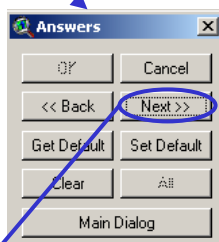
SAVER Example

Following selection of the reports, the Location Description dialog appears again. The previous description should appear as well. Change it if you want.

Click Next.

A report detailing your Selected Reports appears. You may print this, save it, or not. Review it. It should list the reports you selected.

Click Next.
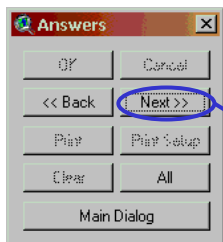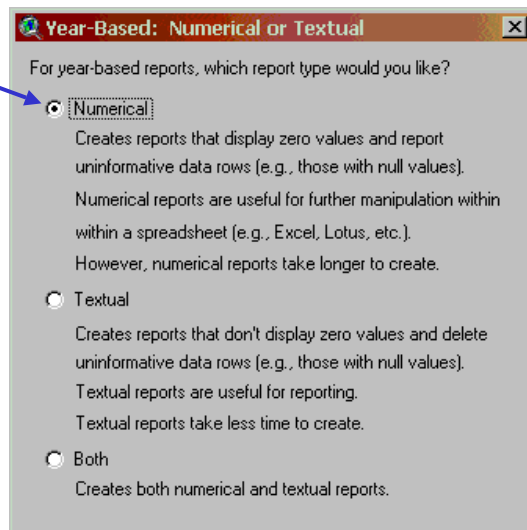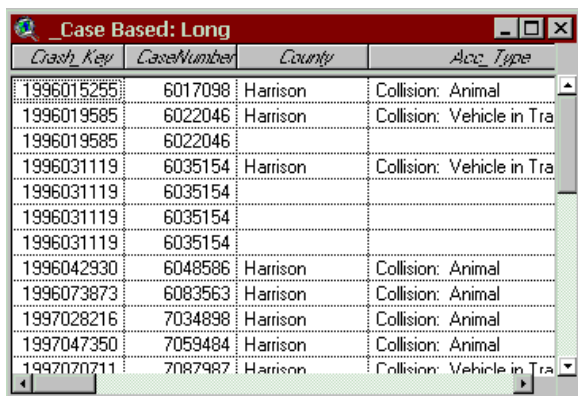
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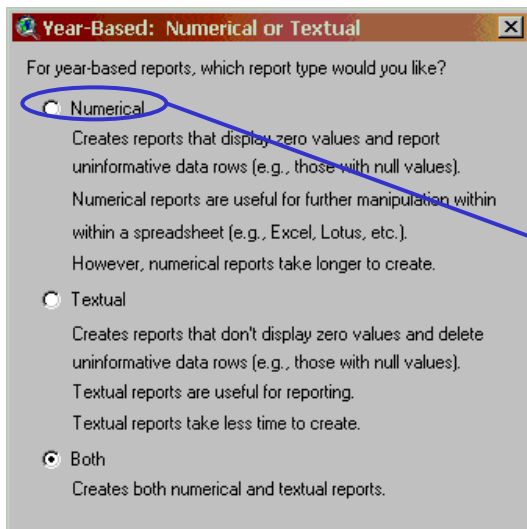
A dialog asking what type of Year Based report you wish appears. The only choice should be Numerical. If not, select Numerical.

Click Next.

The time these reports take to be developed depends on the number of active crash themes (i.e., number of years and number of counties), number of selected crashes, and number of reports selected. This is something that individual users will have to gain experience with as the report development time also depends on computer-specific capabilities (i.e., processor speed and available memory).

Each individual report will appear in the upper left, be developed, and its window hidden finished. The reports run in the order selected. The process is finished when the last report is hidden and no new report appears. Case Based reports will fill in as development is ongoing. Year Based reports will remain blank until the final write stage. If the progress bar is moving (or flashing very rapidly, depending on the things listed above) then SAVER is still running the reports.
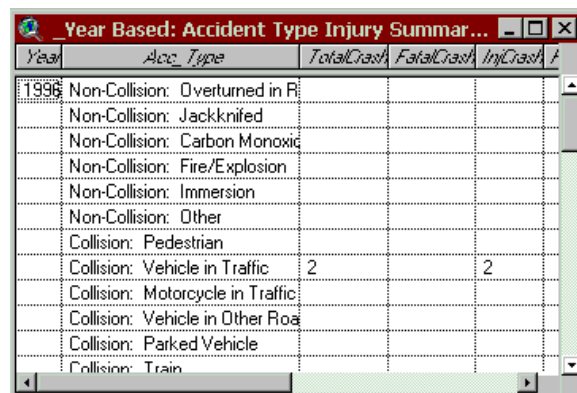
SAVER Example

A case-based report lists many details of each crash in word form (as opposed to code form). The first column, Crash_Key, is an internal SAVER number and is assigned arbitrarily. The CaseNumber column is the case number assigned by the Iowa Department of Transportation (Iowa DOT). Additional details will include some crash-wide statistics (e.g., date, time, severity, collision type, major cause, etc.), vehicle statistics (type, action, damage, etc.), driver statistics (age, gender, condition, contributing circumstances, etc.), and injury statistics (age, gender, severity, restraint use, etc.). The number of additional details is defined by the case-based report chosen. The "minimal" report has sparse details, mostly limited to crash-wide statistics. The "brief" report adds vehicle and driver statistics. The "long" report adds further vehicle and driver statistics and some injury details. The "detailed" report has most typically interesting details about a crash.

A year-based report provides counts of crash severities and injury severities pertaining to each value of a given crash variable by year. For example, if Accident Type were chosen, each value of Accident Type (e.g., Collision: Vehicle in Traffic, Collision: Train, etc.) has the number of total, fatal, injury, and PDO crashes reported. Additionally, the number of total, fatal, major, minor, possible, and unknown injuries are reported. This is done for each year of data active on the map. Therefore, if 2001-2005 data were active, the report would show details for each value of Accident Type for each year.
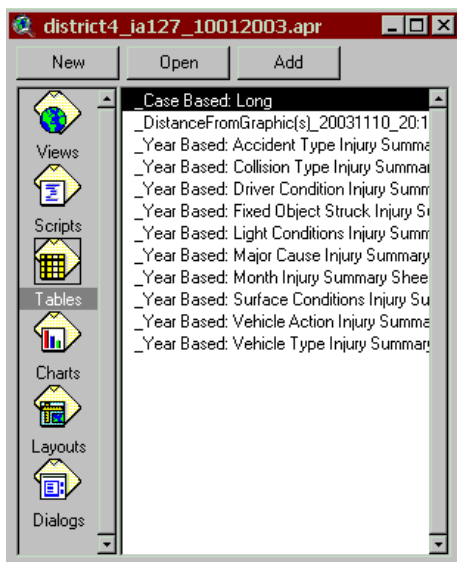
For year-based reports, Excel templates have been developed to enable simplified summarization (e.g., a 5-year summary) and standardized display and print capability. This will be explained in a few pages.

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district4_ia127_10012003.apr

New	Open	Add

Views

Scripts

Tables

Charts

Layouts

Dialogs

_Case Based: Long
_DistanceFromGraphic(s)_20031110_20:1
_Year Based: Accident Type Injury Summa
_Year Based: Collision Type Injury Summar
_Year Based: Driver Condition Injury Summ
_Year Based: Fixed Object Struck Injury S
_Year Based: Light Conditions Injury Summ
_Year Based: Major Cause Injury Summary
_Year Based: Month Injury Summary Shee
_Year Based: Surface Conditions Injury Su
_Year Based: Vehicle Action Injury Summa
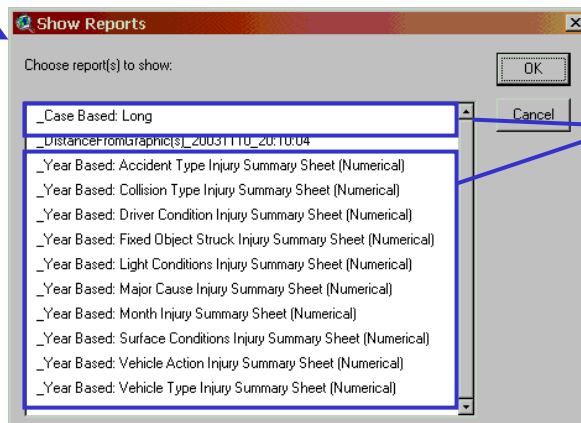_Year Based: Vehicle Type Injury Summar

Once the selected reports have finished running, you will be returned to the Report Dialog.

The report windows will have been closed but they are still available within SAVER in two ways. The first is through the Project Window, which is shown to the left. Using the project window and highlighting the Tables icon, as shown, you can choose any of the reports individually and open them by double-clicking. This is the way to do it using ArcView's normal capabilities.

Report

Count	Run Reports

Report Types
Select data type(s) of interest:
- [ ] Background
- [x] Crash
- [ ] Enforcement

Report Selection

Save	Load
Show	Charts/Graphs
Components	Create
Save Reports	Load Report
Delete Reports	Reset/Clear
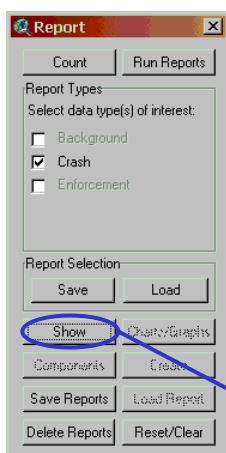
Alternatively, you can show the reports by clicking the show button on the Report Dialog. This is the way to do it using SAVER.

Click Show.

Show Reports

Choose report(s) to show: OK   Cancel

_Case Based: Long
_DistanceFromGraphic(s)_20031110_20:10:04
_Year Based: Accident Type Injury Summary Sheet (Numerical)
_Year Based: Collision Type Injury Summary Sheet (Numerical)
_Year Based: Driver Condition Injury Summary Sheet (Numerical)
_Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
_Year Based: Light Conditions Injury Summary Sheet (Numerical)
_Year Based: Major Cause Injury Summary Sheet (Numerical)
_Year Based: Month Injury Summary Sheet (Numerical)
_Year Based: Surface Conditions Injury Summary Sheet (Numerical)
_Year Based: Vehicle Action Injury Summary Sheet (Numerical)
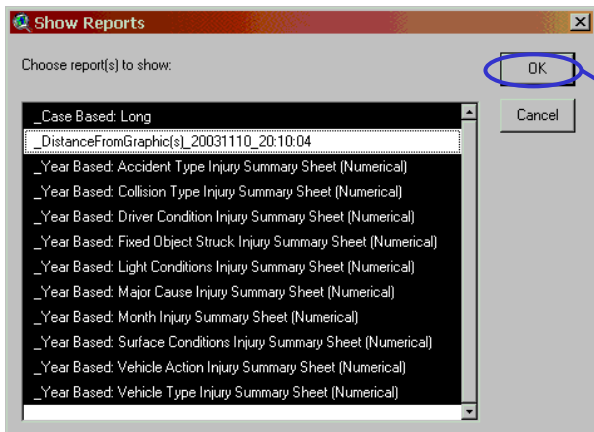_Year Based: Vehicle Type Injury Summary Sheet (Numerical)

Highlight the reports of interest.

A list of the available reports (i.e., those you have created) appears. To highlight those you are interested in, click on the first, then hold the Shift key and select the rest. This selection is a toggle selection; therefore, if you select one accidentally, just click on it again and it will be unselected.
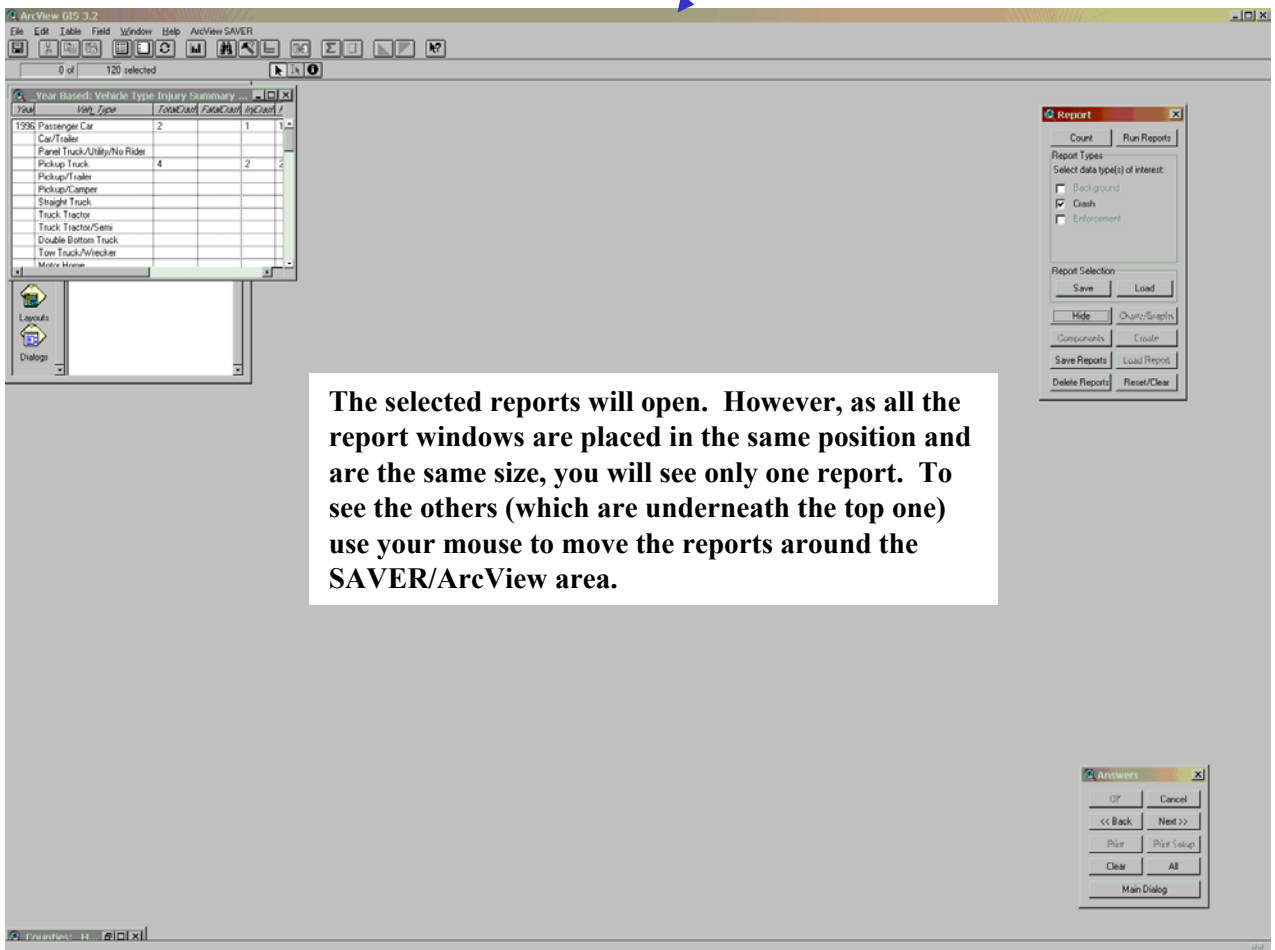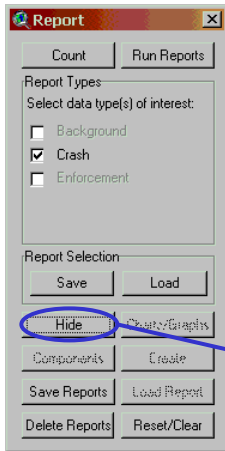
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Show Reports

Choose report(s) to show:

OK   Cancel

_Case Based: Long
_DistanceFromGraphic(s)_20031110_20:10:04
_Year Based: Accident Type Injury Summary Sheet (Numerical)
_Year Based: Collision Type Injury Summary Sheet (Numerical)
_Year Based: Driver Condition Injury Summary Sheet (Numerical)
_Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
_Year Based: Light Conditions Injury Summary Sheet (Numerical)
_Year Based: Major Cause Injury Summary Sheet (Numerical)
_Year Based: Month Injury Summary Sheet (Numerical)
_Year Based: Surface Conditions Injury Summary Sheet (Numerical)
_Year Based: Vehicle Action Injury Summary Sheet (Numerical)
_Year Based: Vehicle Type Injury Summary Sheet (Numerical)

Click OK.

The selected reports will open. However, as all the report windows are placed in the same position and are the same size, you will see only one report. To see the others (which are underneath the top one) use your mouse to move the reports around the SAVER/ArcView area.

Report

Count | Run Reports
Report Types
Select data type(s) of interest:
☐ Background
☑ Crash
☐ Enforcement

Report Selection
Save | Load
Hide | Query/Graphs
Components | Create
Save Reports | Load Report
Delete Reports | Reset/Clear

To close the report windows, you can click on the "X" in the upper right of the windows. This is the Windows or ArcView method of closing the windows.

Alternatively, you can click on the Hide button on the Report Dialog. The Hide button had previously been the Show button but when you clicked on it, it toggled to the Hide button.

Click Hide.

Hide Reports

Choose report(s) to hide: OK | Cancel

_Case Based: Long
_Year Based: Accident Type Injury Summary Sheet (Numerical)
_Year Based: Collision Type Injury Summary Sheet (Numerical)
_Year Based: Driver Condition Injury Summary Sheet (Numerical)
_Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
_Year Based: Light Conditions Injury Summary Sheet (Numerical)
_Year Based: Major Cause Injury Summary Sheet (Numerical)
_Year Based: Month Injury Summary Sheet (Numerical)
_Year Based: Surface Conditions Injury Summary Sheet (Numerical)
_Year Based: Vehicle Action Injury Summary Sheet (Numerical)
_Year Based: Vehicle Type Injury Summary Sheet (Numerical)

Select reports to Hide.

Hide Reports

Choose report(s) to hide: OK | Cancel

_Case Based: Long
_Year Based: Accident Type Injury Summary Sheet (Numerical)
_Year Based: Collision Type Injury Summary Sheet (Numerical)
_Year Based: Driver Condition Injury Summary Sheet (Numerical)
_Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
_Year Based: Light Conditions Injury Summary Sheet (Numerical)
_Year Based: Major Cause Injury Summary Sheet (Numerical)
_Year Based: Month Injury Summary Sheet (Numerical)
_Year Based: Surface Conditions Injury Summary Sheet (Numerical)
_Year Based: Vehicle Action Injury Summary Sheet (Numerical)
_Year Based: Vehicle Type Injury Summary Sheet (Numerical)

Click OK.

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Report

Count	Run Reports

Report Types
Select data type(s) of interest:
- ☐ Background
- ☑ Crash
- ☐ Enforcement

Report Selection

Save	Load
Show	Charts/Graphs
Components	Create
Save Reports	Install Report
Delete Reports	Reset/Clear

To save the reports for other purposes (e.g., opening them with Excel and making nicely formatted reports with lines, centering, titles, etc), click the Save Reports button on the Report Dialog. This will allow you to save each report to a user-defined directory and/or change each file's name.

SAVER will send each file to "C:_saver_user_savedreports\" unless you change the directory. Usually this is a good choice. Moving the files into a directory created for your specific data request can be done later using Windows.

Click Save Reports.

Save Reports

Choose report(s) to save:

| OK |
| Cancel |

_Case Based: Long
_DistanceFromGraphic(s)_20031110_20:10:04
_Year Based: Accident Type Injury Summary Sheet (Numerical)
_Year Based: Collision Type Injury Summary Sheet (Numerical)
_Year Based: Driver Condition Injury Summary Sheet (Numerical)
_Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
_Year Based: Light Conditions Injury Summary Sheet (Numerical)
_Year Based: Major Cause Injury Summary Sheet (Numerical)
_Year Based: Month Injury Summary Sheet (Numerical)
_Year Based: Surface Conditions Injury Summary Sheet (Numerical)
_Year Based: Vehicle Action Injury Summary Sheet (Numerical)
_Year Based: Vehicle Type Injury Summary Sheet (Numerical)

Select the reports to save.

Save Reports

Choose report(s) to save:

| OK |
| Cancel |

_Case Based: Long
_DistanceFromGraphic(s)_20031110_20:10:04
_Year Based: Accident Type Injury Summary Sheet (Numerical)
_Year Based: Collision Type Injury Summary Sheet (Numerical)
_Year Based: Driver Condition Injury Summary Sheet (Numerical)
_Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
_Year Based: Light Conditions Injury Summary Sheet (Numerical)
_Year Based: Major Cause Injury Summary Sheet (Numerical)
_Year Based: Month Injury Summary Sheet (Numerical)
_Year Based: Surface Conditions Injury Summary Sheet (Numerical)
_Year Based: Vehicle Action Injury Summary Sheet (Numerical)
_Year Based: Vehicle Type Injury Summary Sheet (Numerical)

Click OK.

You can specify a different filename if you wish. Many users just use the current filename and change it later after having opened it into Excel.

Click OK.

Unless you have selected a subset of the report and have some reason for saving only that portion, click Yes.
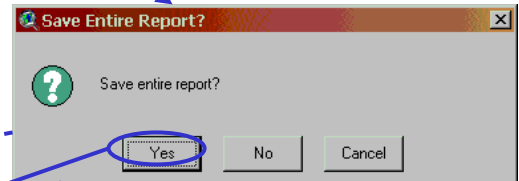
Click Yes.
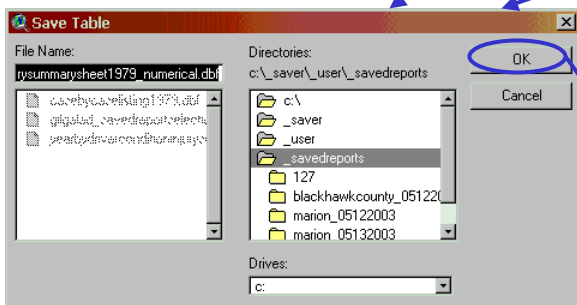
At this point, depending on whether you picked multiple reports to save, the process becomes iterative (as denoted by the broken lines). Just keep clicking OK, then Yes until SAVER returns to the Report Dialog. This process will repeat for all reports you selected to save.

Unless you chose somewhere else to save the files to, they should save under "C:_saver_user_savedreports\".

Use Windows Explorer or My Computer to navigate to that directory. The files just saved should have names reflecting their type and should have a Modified date current to when you saved them. NOTE: You may have to choose the View menu, then the Details option to see the Modified date.

Create a new folder by clicking on the File menu, choosing the New option and then the Folder option. Name this folder appropriately for your data request (e.g., "127", "IA 127", "IA 127 from 566 to 153", etc.). You cannot use periods (".") or a variety of other special characters.
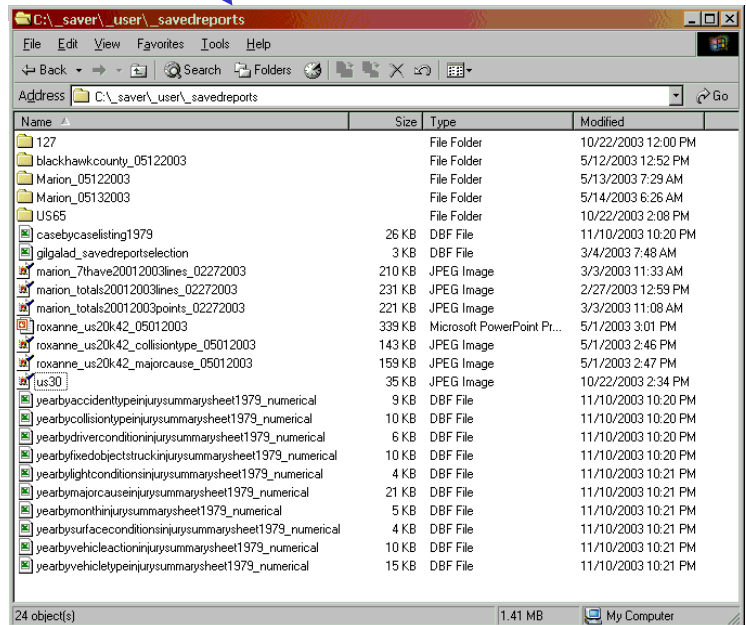
Create folder "127".

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SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005

Next you should copy the saved reports into the newly created folder to foster organization of request output. Highlight the recently saved reports, then cut and paste them into the "127" folder. One way to do this is sliding them into the "127" folder.
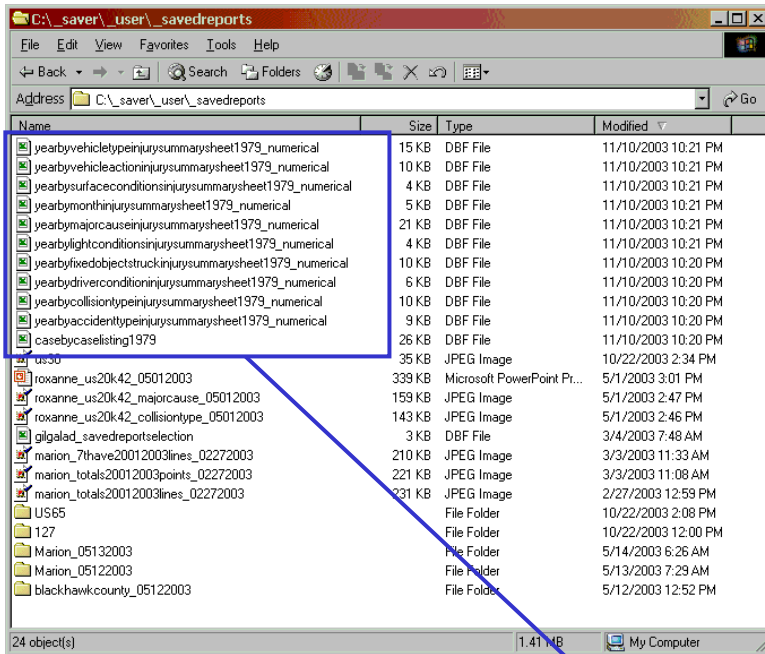
Select the reports.
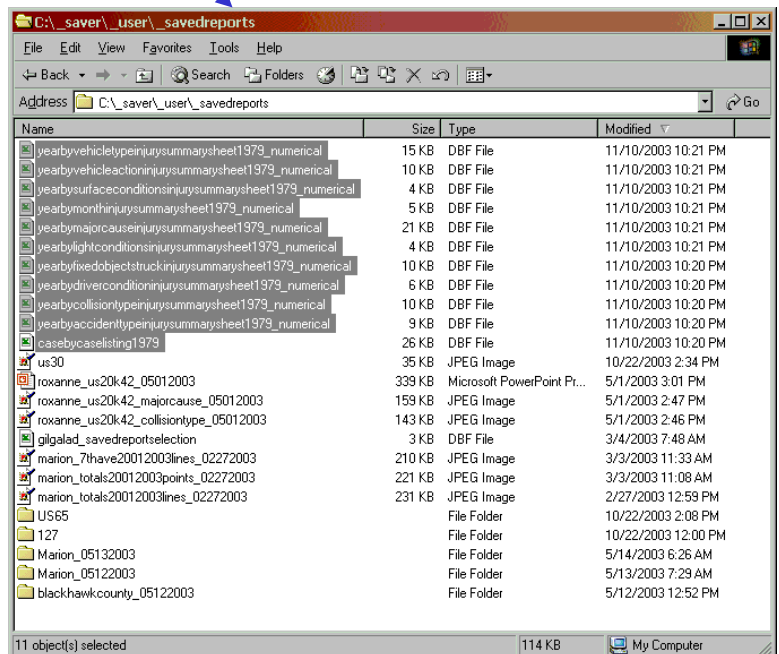
Slide them into the "127" folder and then open the "127" folder.

SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005
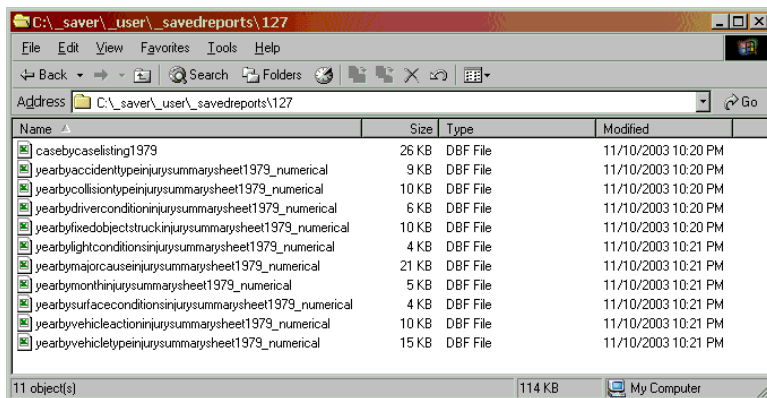
The recently saved reports appear here. Next, for the year-based reports, you can use the Excel templates that have provide standardized header and footer space, formatting, and calculations.

To find the Excel templates, navigate to "C:_saver_user_excel_templates_crash\iowa_2001\". Then find the appropriate year range, 5-year for this example.
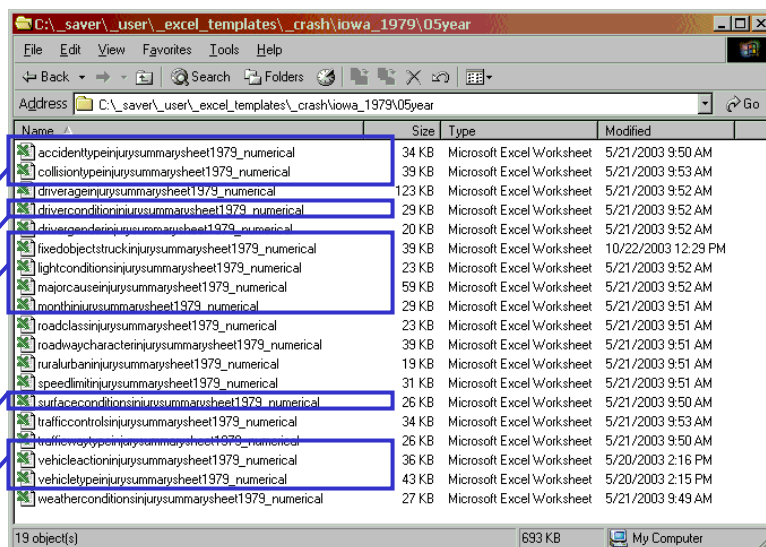
Select the reports corresponding to the year-based reports you ran and saved.
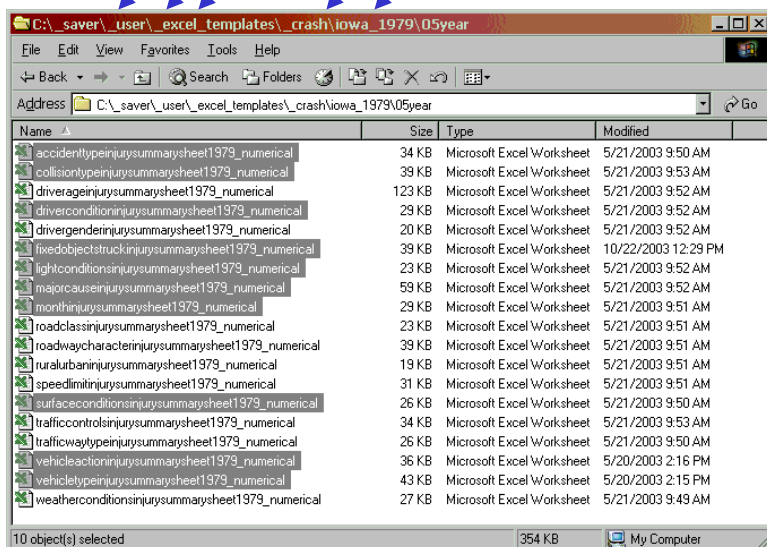
Copy these files. Navigate back to the "127" directory and paste them.

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SAVER Example
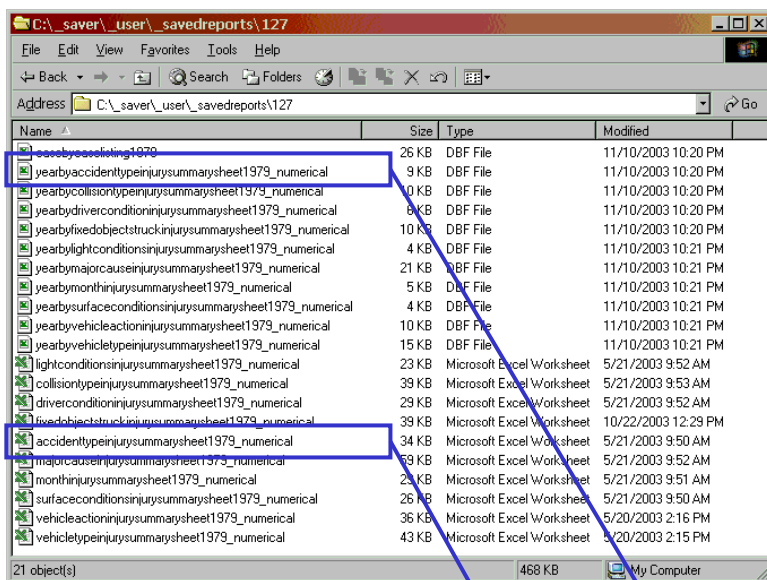
Open one of the SAVER output year-based reports and its appropriate Excel template. If the dBase SAVER output files aren't targeted to open within Excel, you can change this or you can open Excel first, switch to opening files of type dBASE, and then open the file.

Select the files.
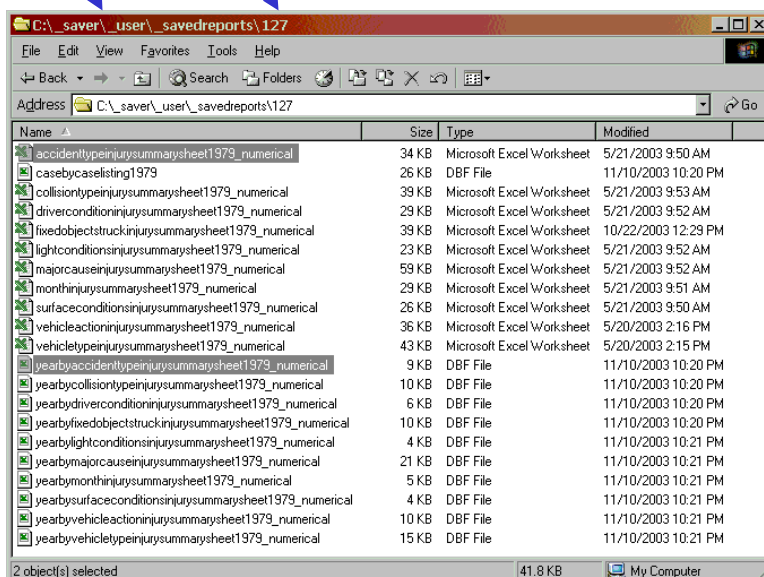
Open the files.

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SAVER Example

Excel should open with both files. If this isn't the case, open the other using Excel. Choose the File menu and the Open choice.

Switch to the SAVER output file (i.e., the dBase file). Place the cursor at the C2 element or position (i.e., in the C column on the 2nd row).

After the cursor is at position C2, hold the Shift key on your keyboard then, in order, depress the End key then the Home key. This highlights the spreadsheet table from C2 to the lower right extent.

Copy this. (Ctrl+C)

SAVER Example

**Switch to the Excel template. Before you can paste the
data, you may have to unprotect the worksheets. To do this
go to Tools>Protection>Unprotect Sheet. If you are
prompted for a password, type in "saver" in all lower case.**
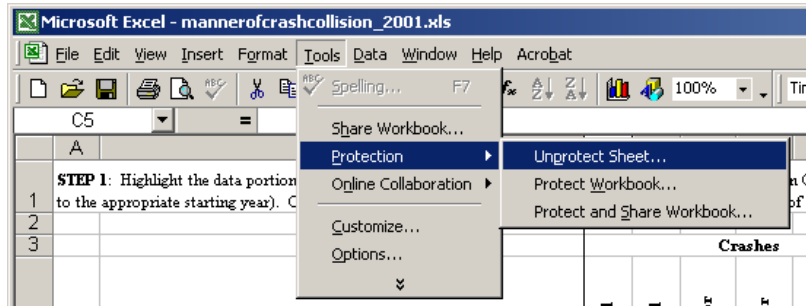
**Place the cursor at position
C5. Paste the copied data
here (Ctrl+V).**

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SAVER Example

**Now switch to the
HeaderFooter tab.**

**Here we can add some header and footer information
that will be useful when printing out the data.**

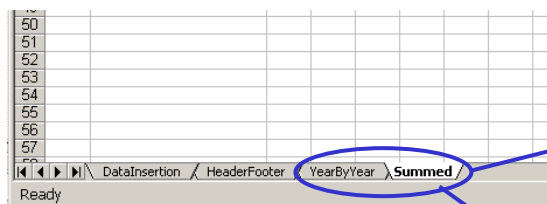**Next page...**

SAVER Example

Information can be added in two locations.
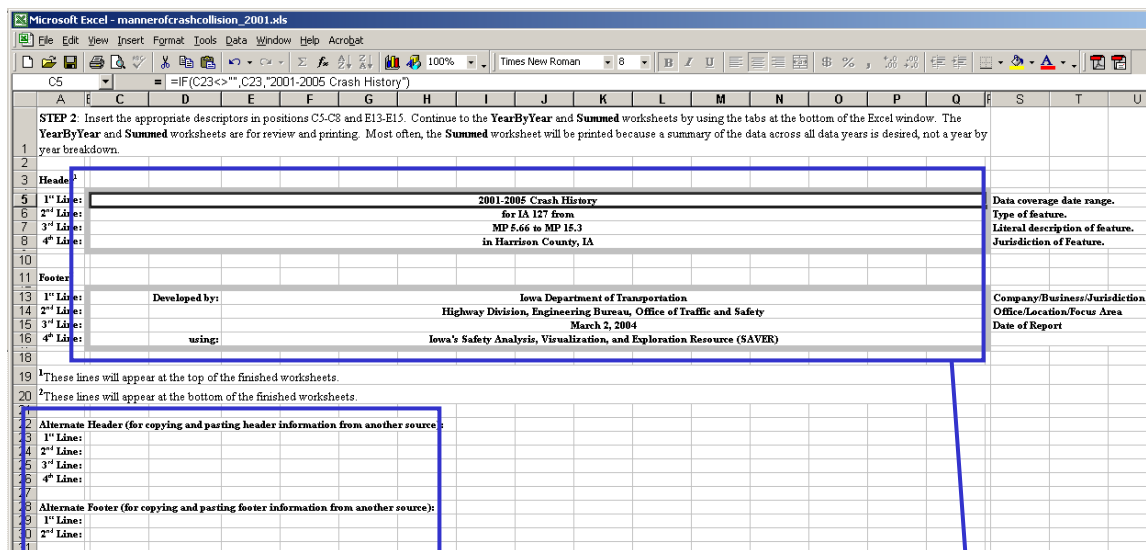
Information can be pasted in here if copied from another source such as SAVER.

You can type information directly in here. This is usually the same information that was entered when doing the Feature Count Report in SAVER.

The description you type will automatically appear on the summary sheet.

Nothing needs to be done in the YearByYear tab. This could be printed as it appears if you wanted to see a Year by Year summary of the crashes.

The Summed tab contains a summary of the data. The only thing that might have to be done here is changing the years in cell A8. This could also then be printed.

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**Do the same for the other output year-based reports.**

If you do all but the header/footer information, then open all the Excel templates simultaneously, you can copy and paste the description and footer between all the Excel templates.
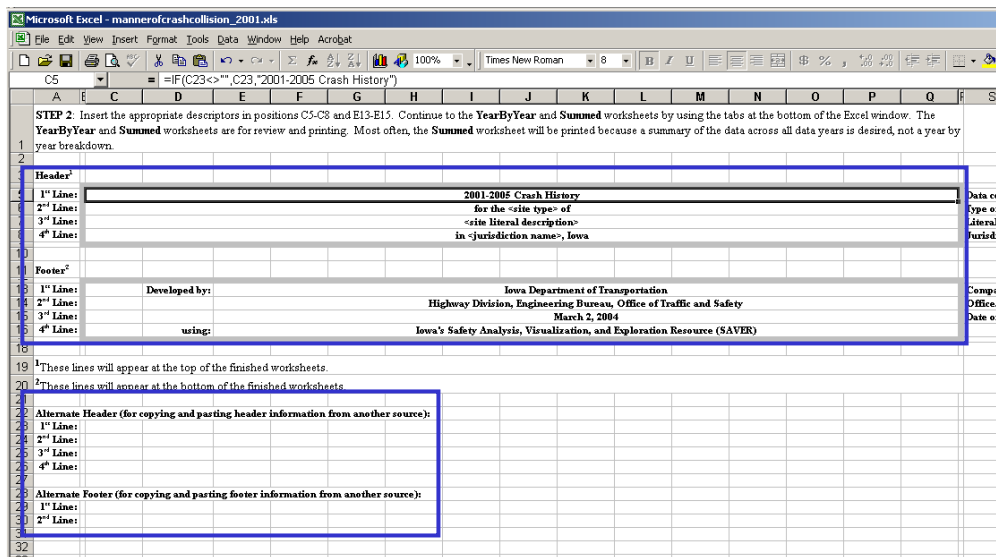
When done or before running further reports, delete the previously created reports. Begin by going back to ArcView SAVER and returning to the Report dialog.
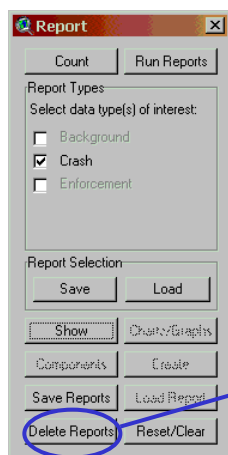
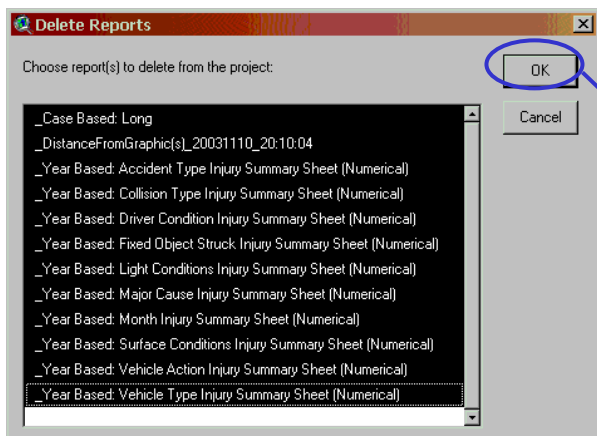**Click the Delete Reports button.**
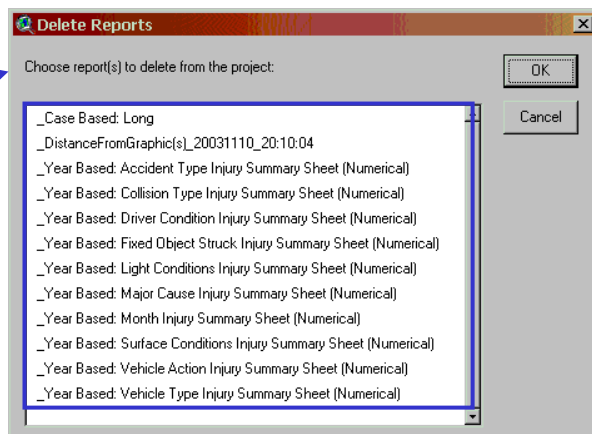
A dialog showing the reports open. Select the reports to delete. Normally, all reports could be selected.
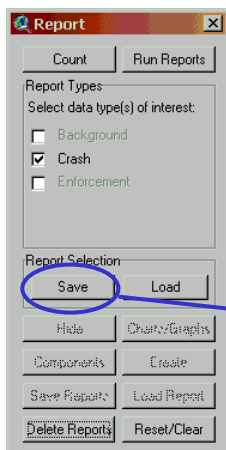
Select the reports to delete.

SAVER Example

Delete Reports

Choose report(s) to delete from the project:

- _Case Based: Long
- _DistanceFromGraphic(s)_20031110_20:10:04
- _Year Based: Accident Type Injury Summary Sheet (Numerical)
- _Year Based: Collision Type Injury Summary Sheet (Numerical)
- _Year Based: Driver Condition Injury Summary Sheet (Numerical)
- _Year Based: Fixed Object Struck Injury Summary Sheet (Numerical)
- _Year Based: Light Conditions Injury Summary Sheet (Numerical)
- _Year Based: Major Cause Injury Summary Sheet (Numerical)
- _Year Based: Month Injury Summary Sheet (Numerical)
- _Year Based: Surface Conditions Injury Summary Sheet (Numerical)
- _Year Based: Vehicle Action Injury Summary Sheet (Numerical)
- _Year Based: Vehicle Type Injury Summary Sheet (Numerical)

OK | Cancel

Click OK.

district4_ia127_10012003.apr

New | Open | Add

- Views
- Scripts
- Tables
- Charts
- Layouts
- Dialogs

Looking at the Project Window, the reports should be gone.

Report

Count | Run Reports

Report Types
Select data type(s) of interest:
- ☐ Background
- ☑ Crash
- ☐ Enforcement

Report Selection
Save | Load
Hide | Charts/Graphs
Components | Create
Save Reports | Load Report
Delete Reports | Reset/Clear

Next, you can save the selection of reports you had created. That is, you can save the fact that you had chosen to run a case-based report and 7 year-based reports. Then, when you do another request, you can run these same reports by loading the report selection file and running reports. You might do this if you knew you'd always run the same reports for every data request you do. Using the saved report selection, you wouldn't have to progress through all the check boxes that you used to select the 8 reports you ran previously.
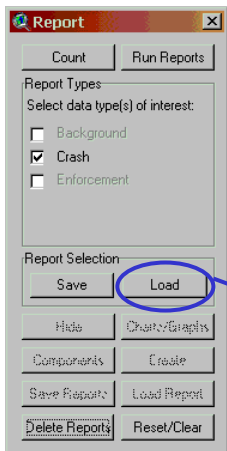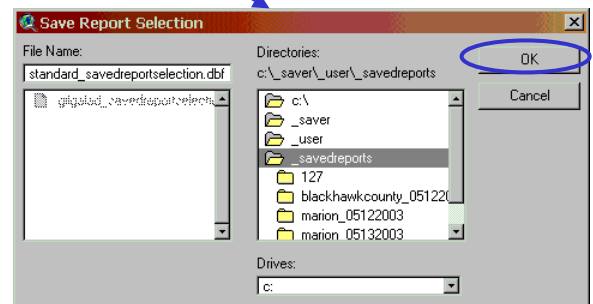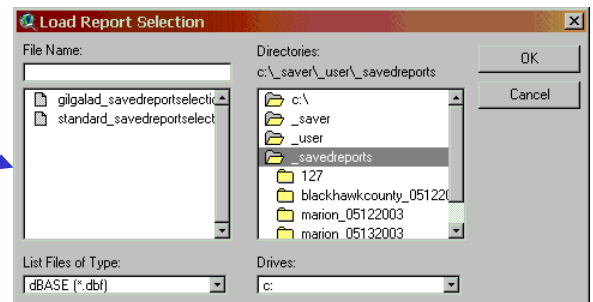
Click Save within the Report Selection control panel.
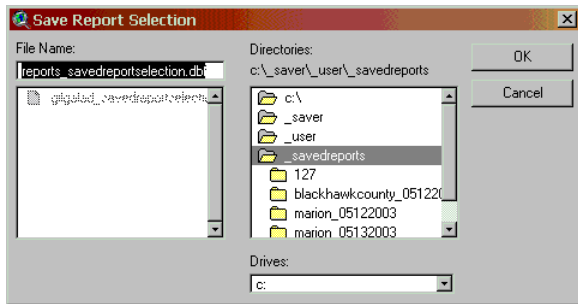
Type in a descriptive term for your saved report selection. You can only replace the portion of the suggested filename prior to the underbar ("_").
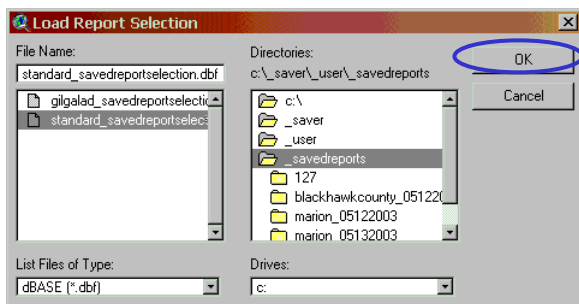
Click OK.

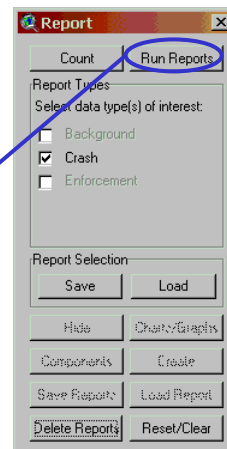**To load the saved report selection, click Load on the Report dialog.**
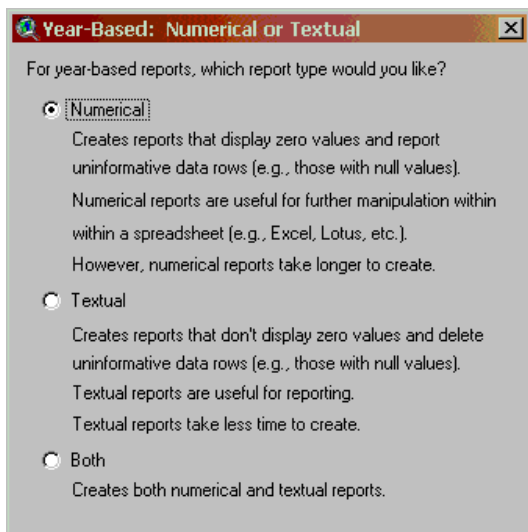
Click Load.

Select the report selection to load.

Load Report Selection

File Name:
standard_savedreportselection.dbf

gilgalad_savedreportselectic
standard_savedreportselect

Directories:
c:_saver_user_savedreports

📁 c:\
📁 _saver
📁 _user
📁 _savedreports
📁 127
📁 blackhawkcounty_05122(
📁 marion_05122003
📁 marion_05132003

List Files of Type:
dBASE (*.dbf)

Drives:
c:

OK

Cancel

Click OK.

The report selection is loaded and available for running.

Report

Count | Run Reports

Report Types
Select data type(s) of interest:

☐ Background
☑ Crash
☐ Enforcement

Report Selection
Save | Load
Hide | Charts/Graphs
Components | Create
Save Reports | Load Report
Delete Reports | Reset/Clear

To run the selected reports, click the Run Reports button on the Reports dialog.

This button will run either loaded report selections or previously selections made during the same SAVER session.

Year-Based: Numerical or Textual

For year-based reports, which report type would you like?

⦿ Numerical

Creates reports that display zero values and report uninformative data rows (e.g., those with null values).
Numerical reports are useful for further manipulation within within a spreadsheet (e.g., Excel, Lotus, etc.).
However, numerical reports take longer to create.

○ Textual

Creates reports that don't display zero values and delete uninformative data rows (e.g., those with null values).
Textual reports are useful for reporting.
Textual reports take less time to create.

○ Both

Creates both numerical and textual reports.

Click the Numerical radio button and progress as before (see page 29).

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Create Stacked Maps

SAVER Example
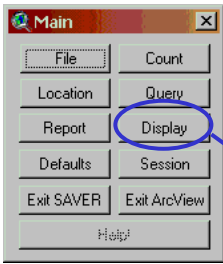
To begin the Stack process, first go to the Display dialog.

Click the Display button.
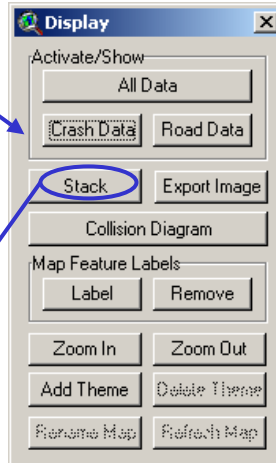
Notice the Stacks control panel. It contains several buttons for Stack creation. All of these will be explained.
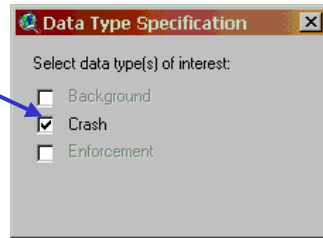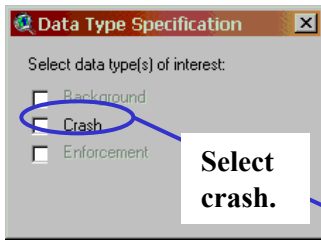
Click the Stack button.

The Stacking Options dialog appears. The Totals option only creates stacks based on the total number of crashes at any one point within the data selection. The Thematic runs the Totals first, then creates stacks based on a selection of user-defined data elements (e.g., Crash Severity, Injury Severity, etc.).
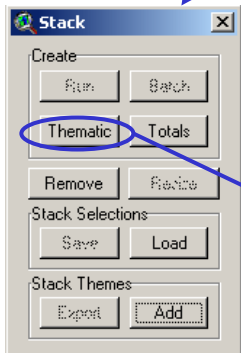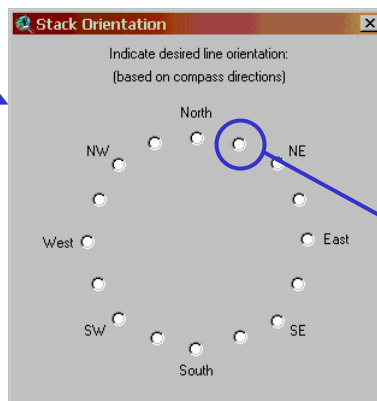
Click the Thematic button.

Select a stack orientation perpendicular (i.e., at right-angles) to the primary road direction…or as near as you can get to this as many roads have curves.

SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005

Data Type Specification

Select data type(s) of interest:

- [ ] Background
- [ ] Crash
- [ ] Enforcement

Select crash.

Data Type Specification

Select data type(s) of interest:

- [ ] Background
- [x] Crash
- [ ] Enforcement

Currently, only crash data is stackable. At some point, other data will have stack features available.
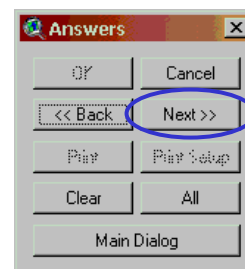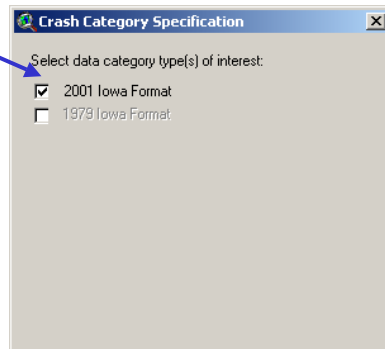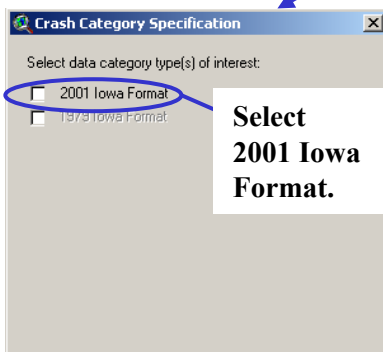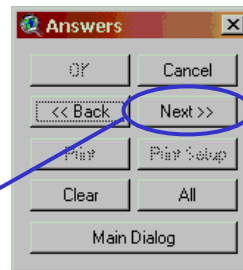
Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

Crash Category Specification

Select data category type(s) of interest:

- [ ] 2001 Iowa Format
- [ ] 1979 Iowa Format

Select 2001 Iowa Format.

Crash Category Specification

Select data category type(s) of interest:

- [x] 2001 Iowa Format
- [ ] 1979 Iowa Format

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

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SAVER Example

2001 Iowa Format Stack Types

Select stack type(s) of interest:

- Crash Type
- Location/Time
- Severity Level
- Environmental
- Driver
- Vehicle
- Vehicle Damage
- Roadway
- Injury
- Non-Motorist
- Work Zone
- Commercial Vehicle
- Enforcement

Select these.

2001 Iowa Format Stack Types

Select stack type(s) of interest:

- ☑ Crash Type
- ☑ Location/Time
- ☑ Severity Level
- Environmental
- Driver
- Vehicle
- Vehicle Damage
- Roadway
- Injury
- Non-Motorist
- Work Zone
- Commercial Vehicle
- Enforcement

Actually, you may select any of these you wish. The more options you select here, the more further options you will have. Additionally, overall, the more options you select, the longer the stack procedure will take.

A good rule-of-thumb is to select only those stack options that make sense for the location you are analyzing.

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

When you click Next, the first sub-category window for the options chosen will open…in this case, the General stack categories. Subsequent selection of a General stack category will get you to the final tier of selection, the parameters for the chosen General stack categories as shown on the next page for Major Cause.

General Stack Categories

Select category(-ies) of interest:

- Type of Accident
- Collision Type
- Major Cause
- Fixed Object Struck
- Location of Fixed O
- Fire/Explosion
- Hit & Run

Select this.

General Stack Categories

Select category(-ies) of interest:

- Type of Accident
- Collision Type
- ☑ Major Cause
- Fixed Object Struck
- Location of Fixed Object
- Fire/Explosion
- Hit & Run

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

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SAVER Example

Major Cause Parameter Selection

Select parameter(s) of interest:

- Animal
- Ran Traffic Signal
- Ran Stop Sign
- Crossed centerline
- FTYROW: At uncontrolled intersection
- FTYROW: Making right turn on red signal
- FTYROW: From stop sign
- FTYROW: From yield sign
- FTYROW: Making left turn
- FTYROW: From driveway
- FTYROW: From parked position
- FTYROW: To pedestrian
- FTYROW: Other (explain in narrative)
- Traveling wrong way or on wrong side of road
- Driving too fast for conditions
- Exceeded authorized speed
- Made improper turn
- Improper Lane Change
- Followed too close
- Disregarded RR Signal
- Disregarded Warning Sign
- Operating vehicle in an erratic/reckless/carel...

- Improper Backing
- Illegally Parked/Unattended
- Swerving/Evasive Action
- Over correcting/over steering
- Downhill runaway
- Equipment failure
- Separation of units
- Ran off road - right
- Ran off road - straight
- Ran off road - left
- Lost Control
- Inattentive/distracted by: Passenger
- Inattentive/distracted by: Use of phone or oth...
- Inattentive/distracted by: Fallen object
- Inattentive/distracted by: Fatigued/asleep
- Other (explain in narrative): Vision obstructed
- Oversized Load/Vehicle
- Cargo/equipment loss or shift
- Other (explain in narrative): Other improper act
- Unknown
- Other (explain in narrative): No improper action
- None indicated

Finally, you may select all of the Major Cause (or whichever category you chose) options or you may limit them to those that are of most interest. If you select all, only the Major Causes represented by the selected crashes will be stacked.

To see which Major Causes may be displayed, you can run a Year-Based: Major Cause report first but you don't have to.

The selected options are shown on the next page.

Compare/ Contrast

Next page.

SAVER Example

Major Cause Parameter Selection

Select parameter(s) of interest:

- ☑ Animal
- ☐ Ran Traffic Signal
- ☐ Ran Stop Sign
- ☐ Crossed centerline
- ☐ FTYROW: At uncontrolled intersection
- ☐ FTYROW: Making right turn on red signal
- ☐ FTYROW: From stop sign
- ☐ FTYROW: From yield sign
- ☐ FTYROW: Making left turn
- ☐ FTYROW: From driveway
- ☐ FTYROW: From parked position
- ☐ FTYROW: To pedestrian
- ☐ FTYROW: Other (explain in narrative)
- ☐ Traveling wrong way or on wrong side of road
- ☑ Driving too fast for conditions
- ☐ Exceeded authorized speed
- ☐ Made improper turn
- ☐ Improper Lane Change
- ☑ Followed too close
- ☐ Disregarded RR Signal
- ☐ Disregarded Warning Sign
- ☐ Operating vehicle in an erratic/reckless/careless

- ☐ Improper Backing
- ☐ Illegally Parked/Unattended
- ☑ Swerving/Evasive Action
- ☑ Over correcting/over steering
- ☑ Downhill runaway
- ☐ Equipment failure
- ☐ Separation of units
- ☑ Ran off road - right
- ☐ Ran off road - straight
- ☑ Ran off road - left
- ☐ Lost Control
- ☐ Inattentive/distracted by: Passenger
- ☐ Inattentive/distracted by: Use of phone or other
- ☐ Inattentive/distracted by: Fallen object
- ☐ Inattentive/distracted by: Fatigued/asleep
- ☐ Other (explain in narrative): Vision obstructed
- ☐ Oversized Load/Vehicle
- ☐ Cargo/equipment loss or shift
- ☐ Other (explain in narrative): Other improper act
- ☐ Unknown
- ☑ Other (explain in narrative): No improper action
- ☑ None indicated

Click next.

Answers

OK | Cancel
<< Back | Next >>
Print | Print Setup
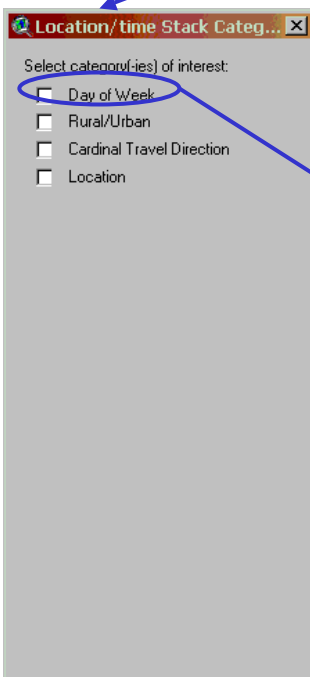Clear | All
Main Dialog

Once you click next, if further options have been selected, they will automatically appear. Thus, the change from Major Cause parameters to the Location/Time categories.

Follow the same procedure for selecting options of interest.

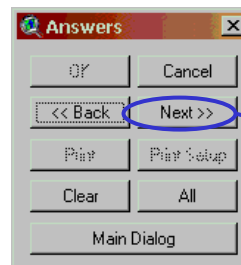**Location/time Stack Categ...**

Select category(-ies) of interest:
- ☐ Day of Week
- ☐ Rural/Urban
- ☐ Cardinal Travel Direction
- ☐ Location

Location/time Stack Categ...

Select category(-ies) of interest:
- ☑ Day of Week
- ☐ Rural/Urban
- ☐ Cardinal Travel Direction
- ☐ Location

Answers

OK | Cancel
<< Back | Next >>
Print | Print Setup
Clear | All
Main Dialog

Click next.

SAVER Example

Day Of Week Parameter Selection

Select parameter(s) of interest:
- [ ] Sunday
- [ ] Monday
- [ ] Tuesday
- [ ] Wednesday
- [ ] Thursday
- [ ] Friday
- [ ] Saturday

Answers

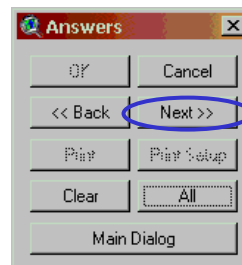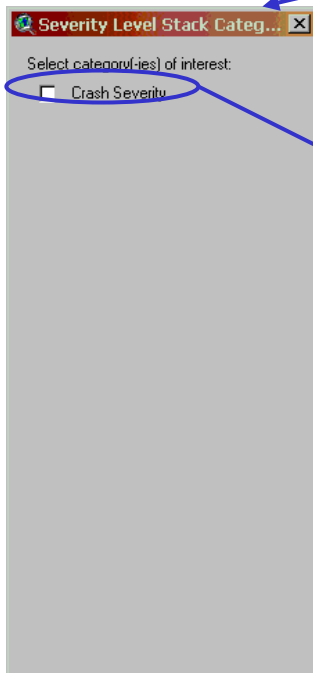| OK | Cancel |
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	
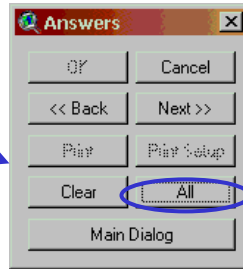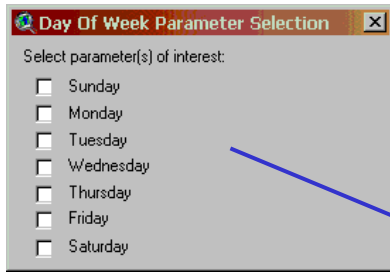
Continue through the selections. If you want every option under a certain set, use the All button on the Answers dialog.

Click All.
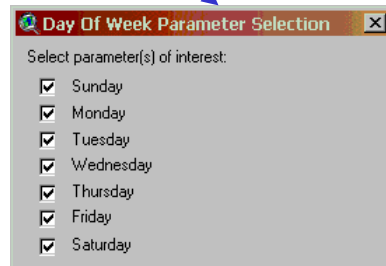
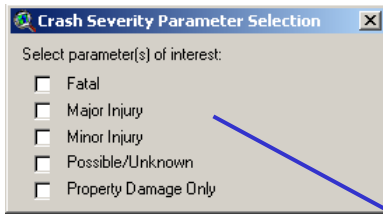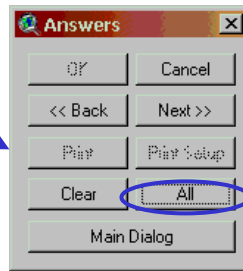**Day Of Week Parameter Selection**

Select parameter(s) of interest:
- [x] Sunday
- [x] Monday
- [x] Tuesday
- [x] Wednesday
- [x] Thursday
- [x] Friday
- [x] Saturday

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

Severity Level Stack Categ...

Select category(-ies) of interest:
- [ ] Crash Severity

Severity Level Stack Categ...

Select category(-ies) of interest:
- [x] Crash Severity

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

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SAVER Example

Crash Severity Parameter Selection

Select parameter(s) of interest:
- ☐ Fatal
- ☐ Major Injury
- ☐ Minor Injury
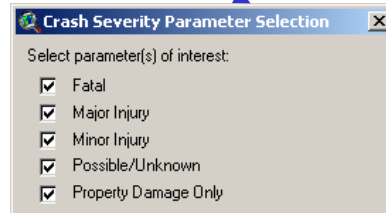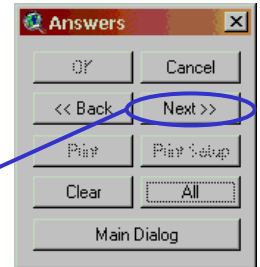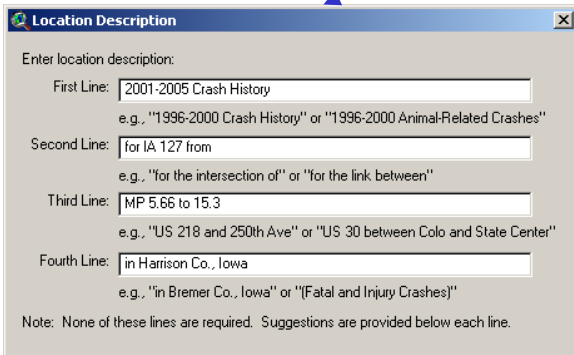- ☐ Possible/Unknown
- ☐ Property Damage Only

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click All.

Crash Severity Parameter Selection

Select parameter(s) of interest:
- ☑ Fatal
- ☑ Major Injury
- ☑ Minor Injury
- ☑ Possible/Unknown
- ☑ Property Damage Only

Answers

OK	Cancel
<< Back	Next >>
Print	Print Setup
Clear	All
Main Dialog	

Click next.

Once all the selections you indicated are finished, a site description window will appear. If you had already filled this information in during some other process (e.g., Query or Report) then it will have that same description. If not, fill it in at your discretion.

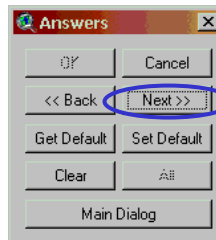**Location Description**

Enter location description:

First Line: `2001-2005 Crash History`
e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line: `for IA 127 from`
e.g., "for the intersection of" or "for the link between"

Third Line: `MP 5.66 to 15.3`
e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line: `in Harrison Co., Iowa`
e.g., "in Bremer Co., Iowa" or "(Fatal and Injury Crashes)"

Note: None of these lines are required. Suggestions are provided below each line.
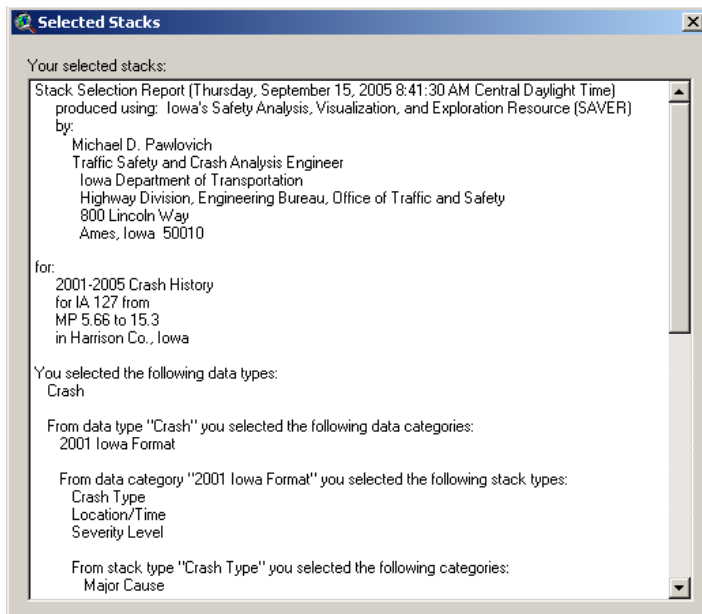
Answers

OK	Cancel
<< Back	Next >>
Get Default	Set Default
Clear	All
Main Dialog	

Click next.

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Selected Stacks

Your selected stacks:

Stack Selection Report (Thursday, September 15, 2005 8:41:30 AM Central Daylight Time)
produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
by:
  Michael D. Pawlovich
  Traffic Safety and Crash Analysis Engineer
  Iowa Department of Transportation
  Highway Division, Engineering Bureau, Office of Traffic and Safety
  800 Lincoln Way
  Ames, Iowa 50010

for:
  2001-2005 Crash History
  for IA 127 from
  MP 5.66 to 15.3
  in Harrison Co., Iowa

You selected the following data types:
  Crash

  From data type "Crash" you selected the following data categories:
  2001 Iowa Format

    From data category "2001 Iowa Format" you selected the following stack types:
    Crash Type
    Location/Time
    Severity Level

      From stack type "Crash Type" you selected the following categories:
      Major Cause

Next you will see a report, similar to those developed for the Query and Report functions, that outlines all the choices you've just made. Print/copy for your records or disregard.

Answers

OK   Cancel
Back   Next >>
Print   Print Setup
Clear   All
Main Dialog

Click next.

Completion

Stacking complete.
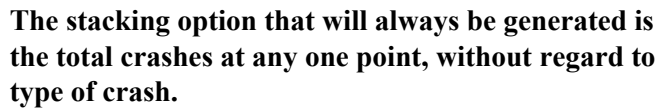Click OK to continue.

OK
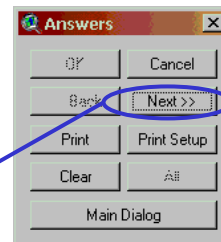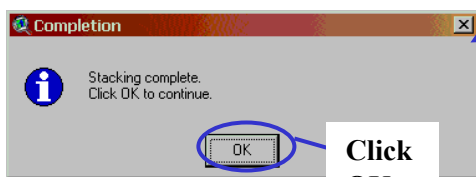
Click OK.

After a wait, the length of which depends on the number of crashes selected, the number of crash stacking options chosen, and the number of years being stacked over, this stacking completion dialog appears.

Counties: Harrison (09/01/2005 09:33:50)
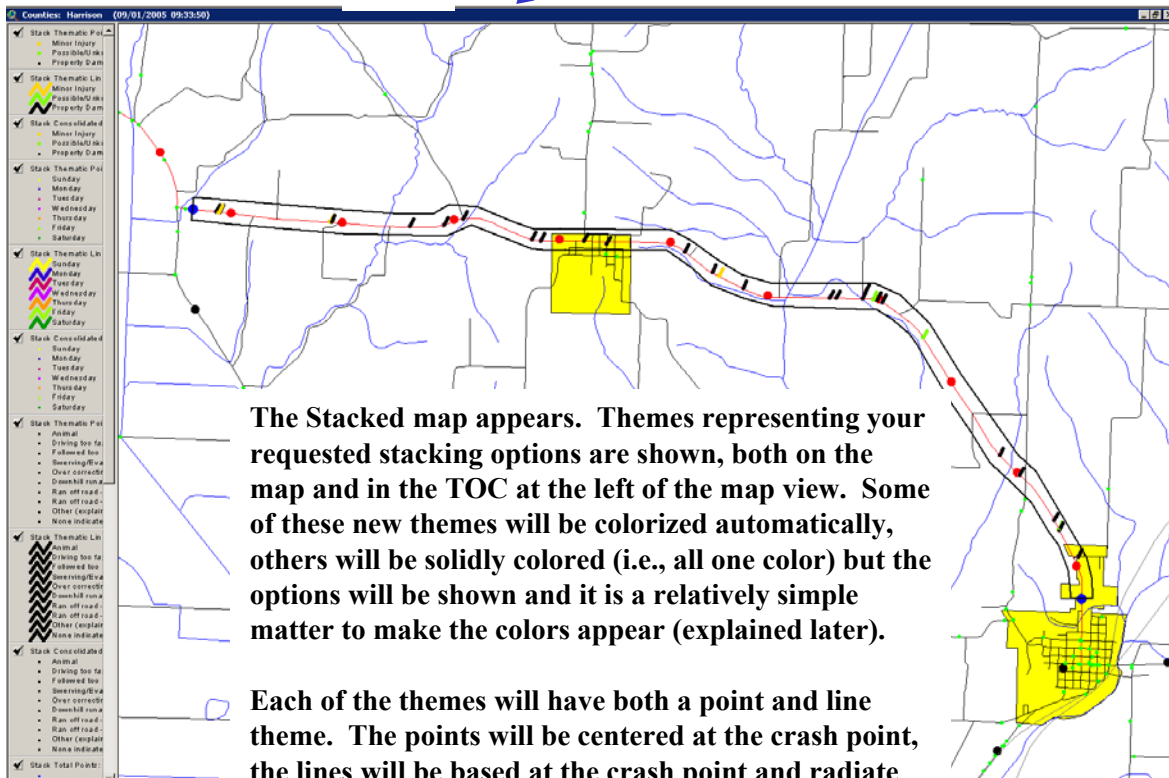
The Stacked map appears. Themes representing your requested stacking options are shown, both on the map and in the TOC at the left of the map view. Some of these new themes will be colorized automatically, others will be solidly colored (i.e., all one color) but the options will be shown and it is a relatively simple matter to make the colors appear (explained later).
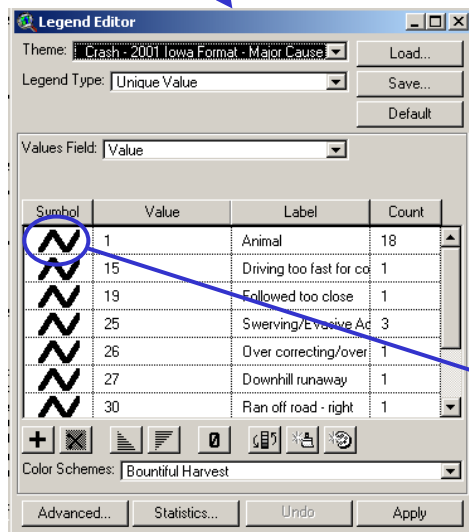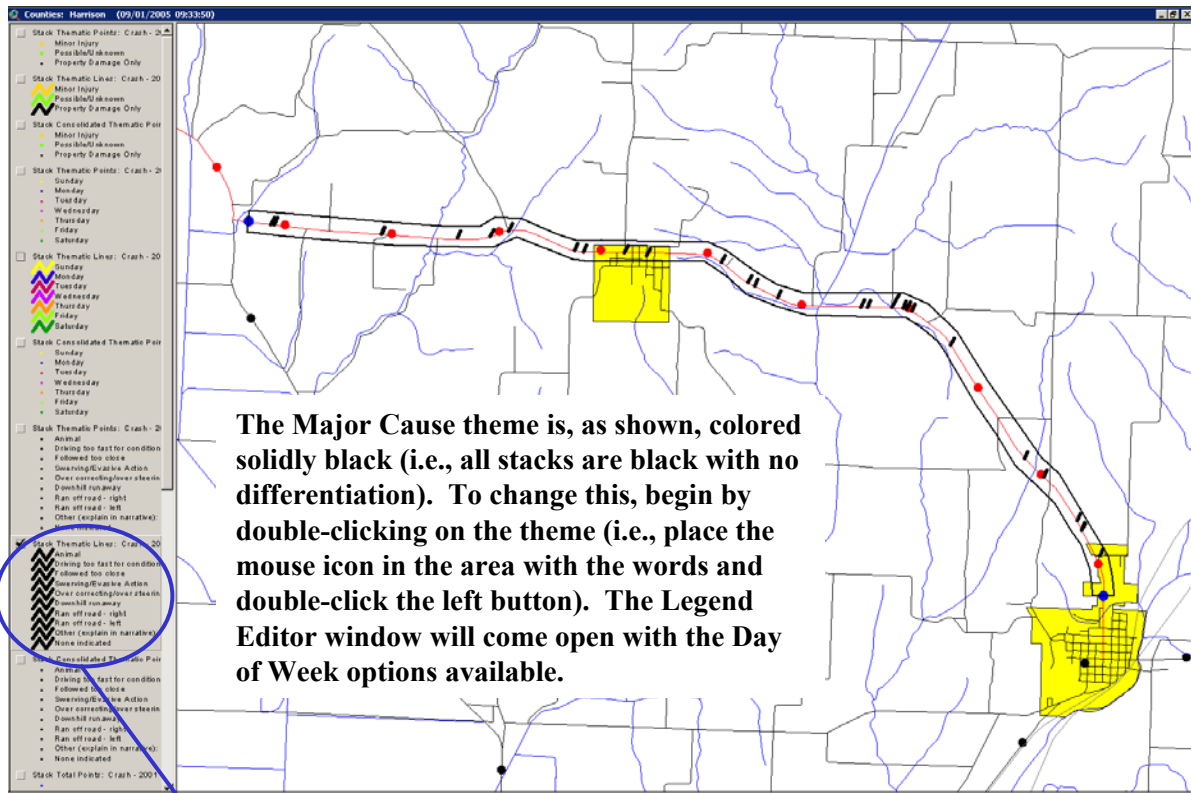
Each of the themes will have both a point and line theme. The points will be centered at the crash point, the lines will be based at the crash point and radiate outward based on numbers of crashes.

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SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005

The stacking option that will always be generated is the total crashes at any one point, without regard to type of crash.

Another oft-generated stacking option is the crash severity. These are automatically colorized, with fatal crashes represented by red, injury crashes with some shade of yellow/orange, possible/unknown a shade of green, and property damage crashes by black.

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The Major Cause theme is, as shown, colored solidly black (i.e., all stacks are black with no differentiation). To change this, begin by double-clicking on the theme (i.e., place the mouse icon in the area with the words and double-click the left button). The Legend Editor window will come open with the Day of Week options available.

Two ways are available to change the colors of the stacks. Both will be explained.

With the Legend Editor window open, you can change individual colors for each category, if you choose. To do this, first double-click on the symbol to the left of a particular category. As shown, for example, double-click on the symbol to the left of the Animal label. The Pen Palette will open.
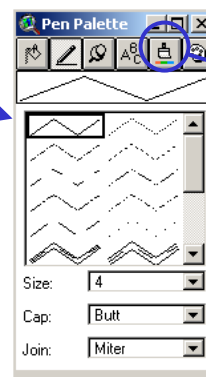
Choose the Paint Brush option.

SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005
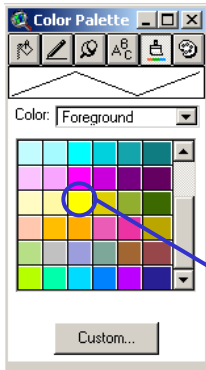
Choose the color you are interested in. It should change in the Legend Editor window.
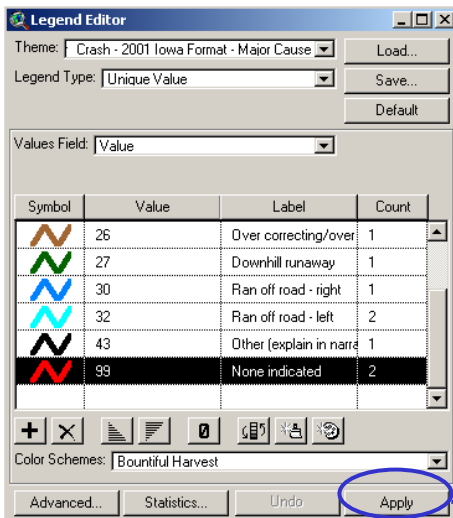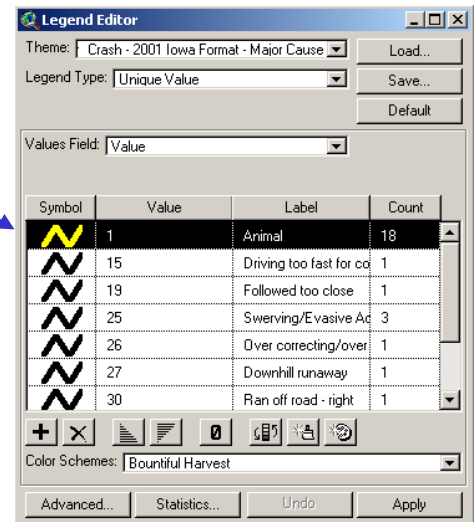
Do the same for the other categories. Try to pick colors that might aid understanding of the meaning. This isn't always possible.

Click Apply. Then close out of the Pen Palette and Legend Editor.

SAVER Example

The map and TOC change accordingly.

Do the same for any other themes that need to be changed. Again, begin by double-clicking on the theme.

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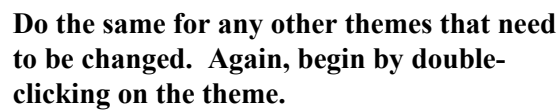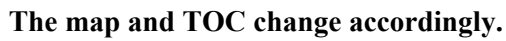
SAVER Example
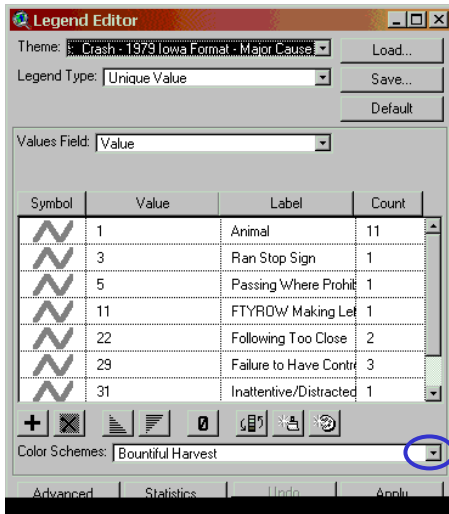
**This time, use the color schemes near
the bottom of the Legend Editor.**

**Click the list arrow
to the right of the
Color Schemes.**

**Choose an appropriate color scheme.
You may have to investigate several.**
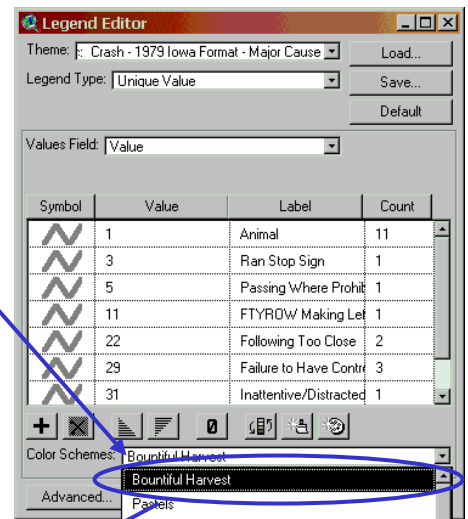
**Choosing a color schemes
automatically colorizes all
options. However, the color
choices are less likely to be
appropriate for the meaning.**
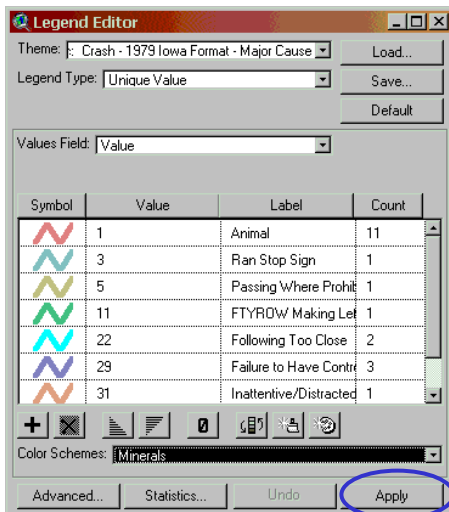
**Click
Apply.**

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SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005

The map and TOC change accordingly.
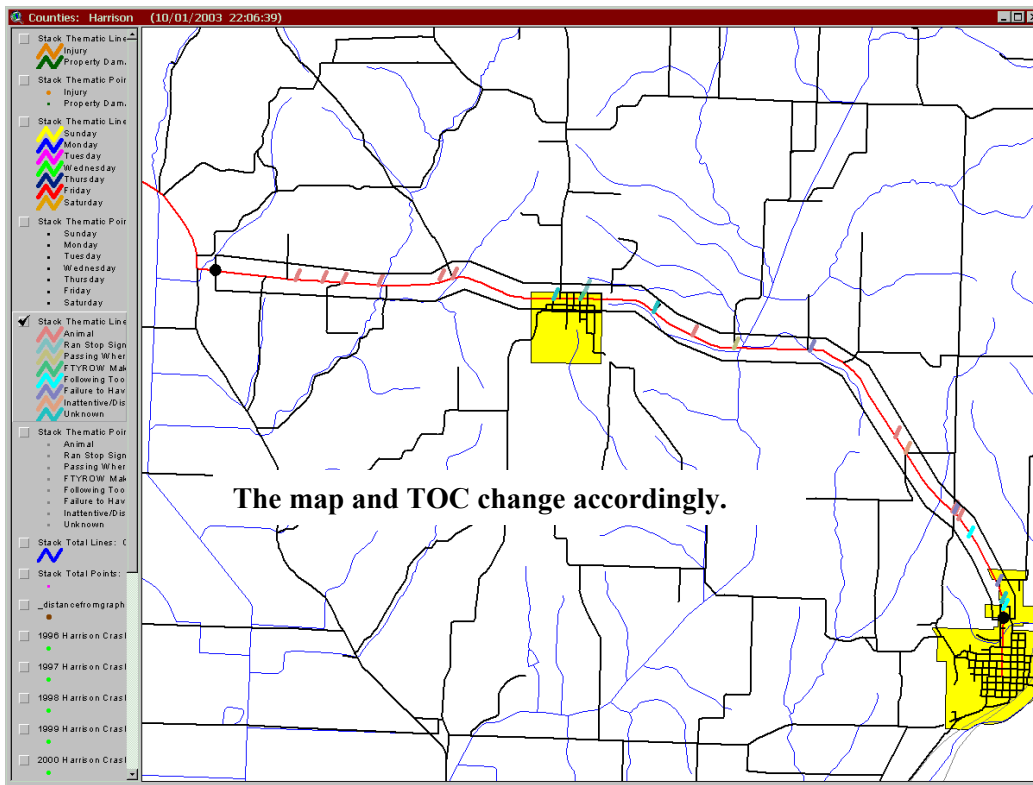
Next, you may want to save the map image for posterity or for purposes of inclusion into a report (e.g., the Feature Count report that you may have brought into Microsoft Word).

Go to the Display dialog box.
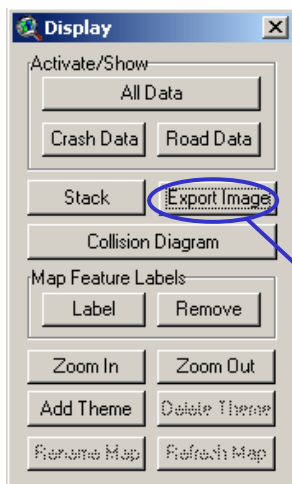
Click Export Image.
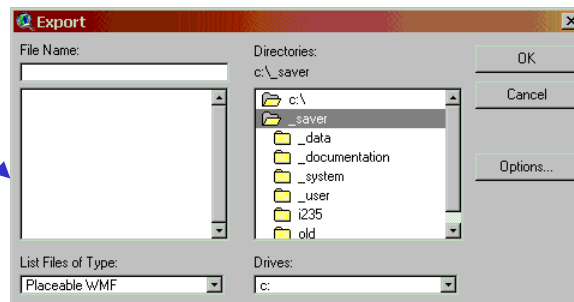
The Export window appears, enabling assignment of file names and choice of image save format.

SAVER Example
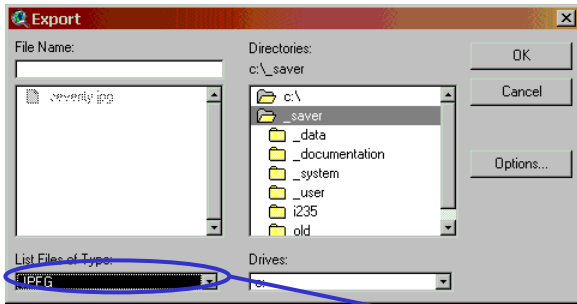
Most often, JPEG images are small in file size so are relatively easy to transfer but they also often have sufficient image quality. The JPEG choice is at the bottom of the choices. Use whatever you wish, however.

Choose your save directory location or use the default save directory.
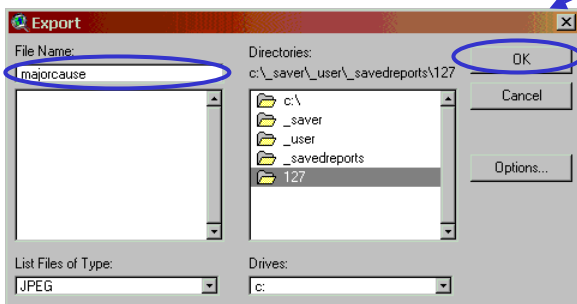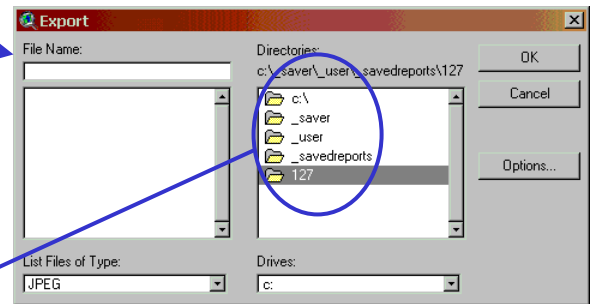
Assign a filename. It can be whatever you choose but you might consider a descriptive name.

You can bring these images into many software packages (e.g., Word, PowerPoint, etc.). In this case, you'll be shown how to bring an image into MicroSoft PowerPoint.

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SAVER Example
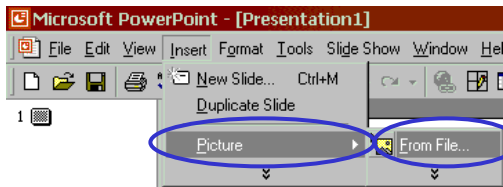
Within PowerPoint, you'll first have to pick some sort of presentation template. This may change between versions of PowerPoint. A blank template is usually good.

Choose Picture → From File.

Once PowerPoint is open, choose Picture → From File from the Insert menu.
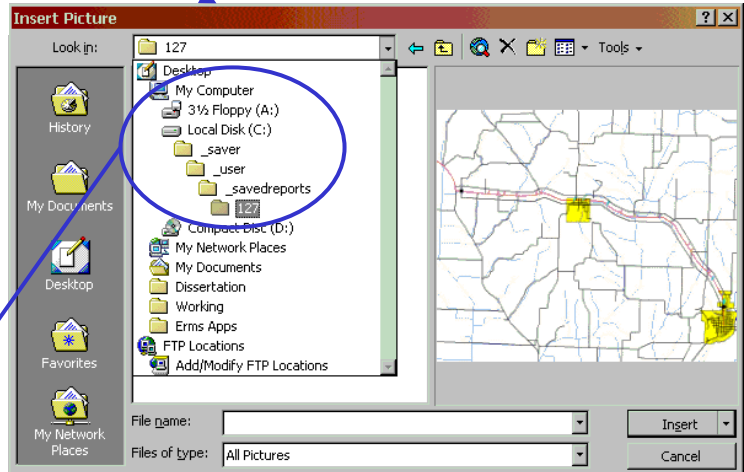
Navigate to the file location.
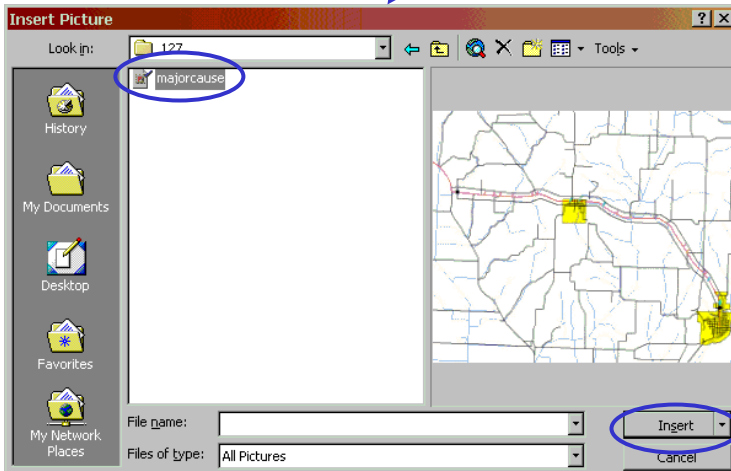
Highlight the file and click Insert.

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SAVER Example
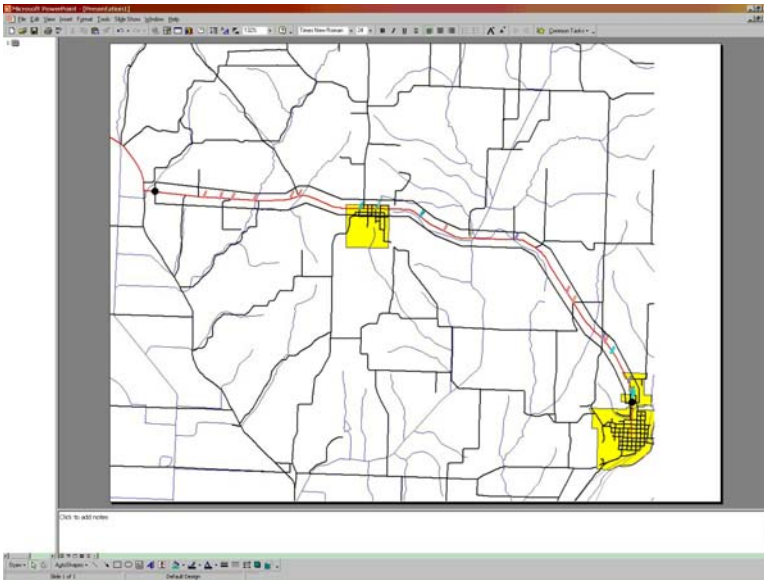
The image should appear.

Now, other presentation items may be inserted (title, key, agency, etc.).

A key for the stacked items may be obtained by making a screen print of the ArcView map, pasting it into an image software, and clipping just the thematic theme's TOC listing. Start by having the map visible and making sure the TOC is wide enough to display the thematic descriptions. Then depress your <PrtSc> button on your keyboard (this is likely in the upper right of the keyboard). Then open up Microsoft Photo Editor or some other image software, clip the image to just the portion you want, and save it to file. Insert this file just as you did the map.
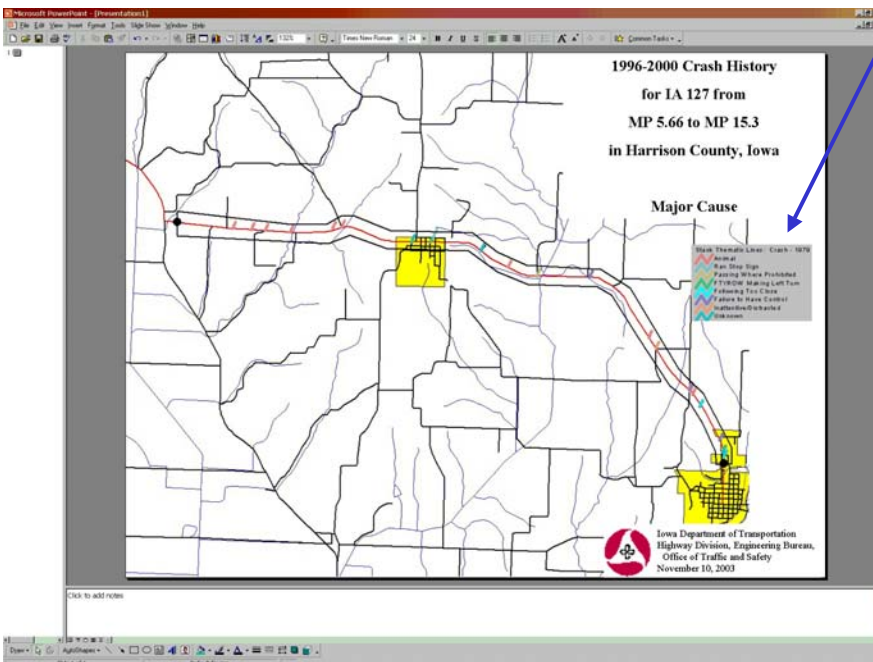
Insert a textbox for the title and type in an appropriate, descriptive title.

Insert any logo you might wish to include (e.g., the Iowa DOT logo). Then insert another textbox and type in an appropriate designation of your office.

SAVER Example
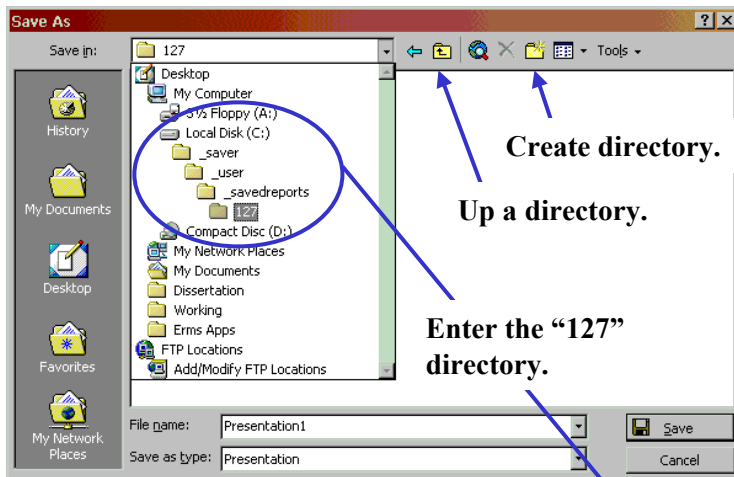
Save the file. To do so, open the File menu and select Save As.

Pick the directory to save to. You can create a new directory if you wish. Type in an appropriate file name. Click Save.

In this example, a sub-directory named "127" was created, we've gone into that directory, and the file will be titled "majorcause".

Create directory.

Up a directory.

Enter the "127" directory.

Name the file "majorcause".
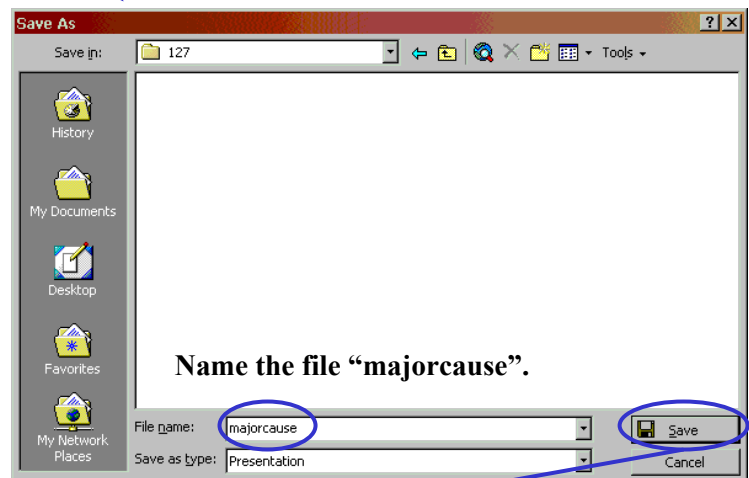
Click Save.

The file is saved. You may also print the file.

Next, we look at saving the individual themes to shapefiles – 1) to preserve them in case we want to review them later and 2) to allow us to send our results to other SAVER or other GIS users (e.g., SAVER shapefiles can be read into GeoMedia which many in the Iowa DOT use).

SAVER Example

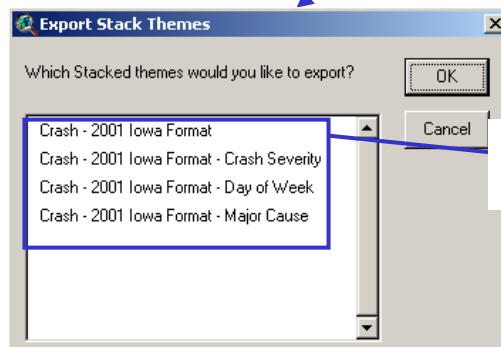**To begin, make sure that the themes you wish to save are active in the SAVER map window.**
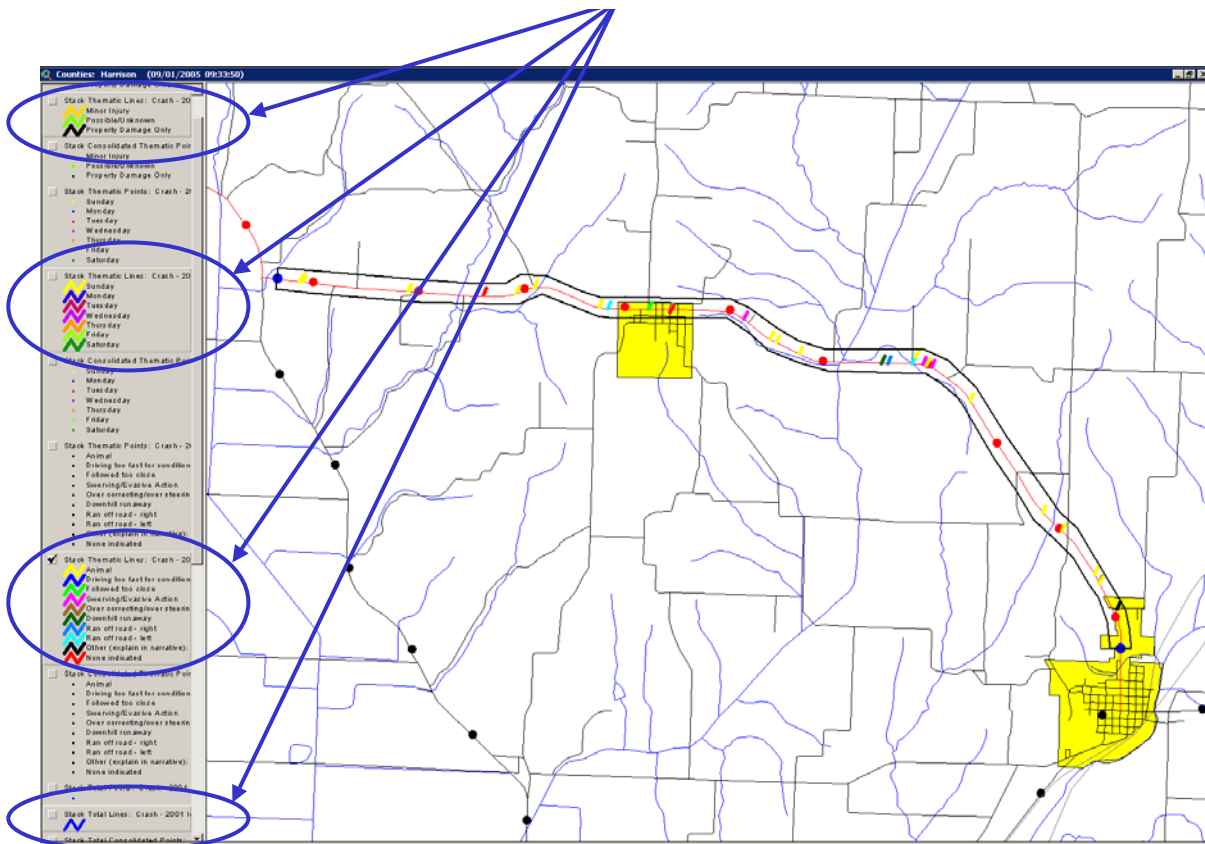
Make sure you are in the Display dialog.
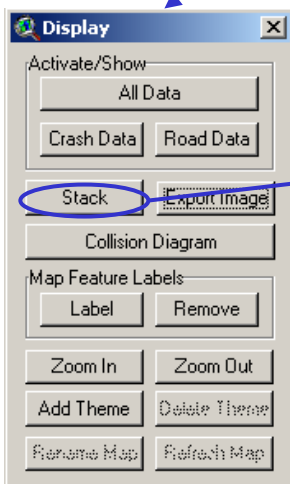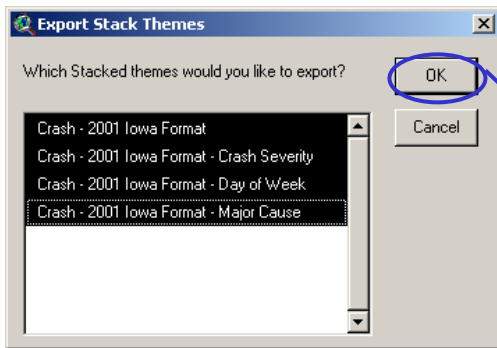
Click Stack in the Display dialog panel.
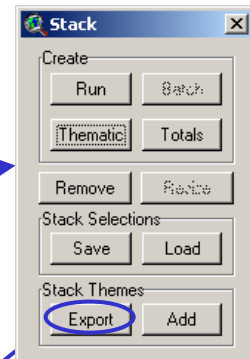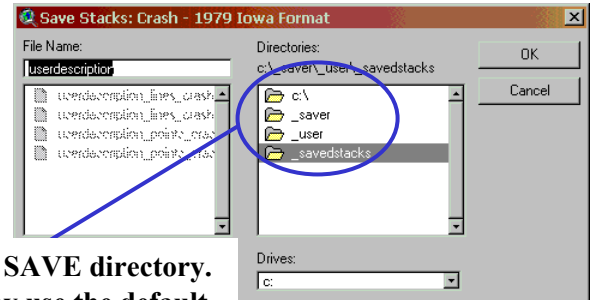
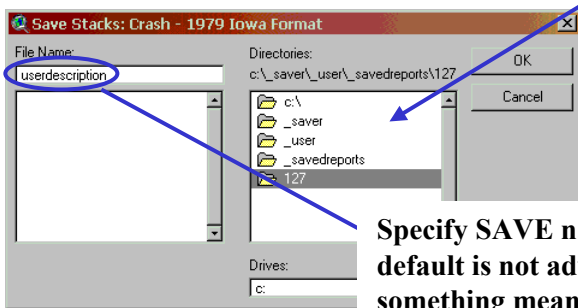**Click Export in the Stack Themes control panel.**
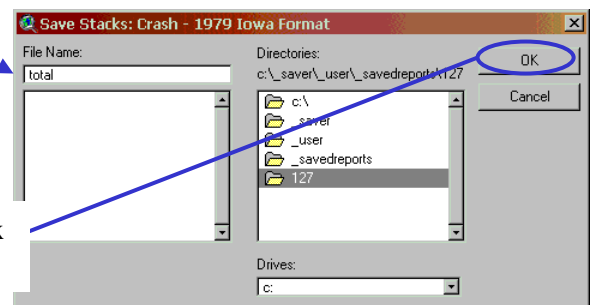
Choose the themes to save.

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SAVER Example

Export Stack Themes

Which Stacked themes would you like to export?

Crash - 2001 Iowa Format
Crash - 2001 Iowa Format - Crash Severity
Crash - 2001 Iowa Format - Day of Week
Crash - 2001 Iowa Format - Major Cause

OK
Cancel

Click OK.

SAVER will open a Save File dialog. Using this dialog, you can specify a save location and a save name. Note that the Save File dialog identifies the stacked theme that is being saved at the top. Pick a name that is appropriate. It doesn't have to be long and SAVER will add some additional description to the file anyway.

Save Stacks: Crash - 1979 Iowa Format

File Name:
userdescription

Directories:
c:_saver_user_savedstacks

c:\
_saver
_user
_savedstacks

OK
Cancel

Drives:
c:

Choose SAVE directory. You may use the default.

Save Stacks: Crash - 1979 Iowa Format

File Name:
userdescription

Directories:
c:_saver_user_savedreports\127

c:\
_saver
_user
_savedreports
127

OK
Cancel

Drives:
c:

Specify SAVE name. Using the default is not advised. Choose something meaningful to you.

Save Stacks: Crash - 1979 Iowa Format

File Name:
total

Directories:
c:_saver_user_savedreports\127

c:\
_saver
_user
_savedreports
127

OK
Cancel

Drives:
c:

Click OK.

Save All Records?

Stack Total Lines: Crash - 1979 Iowa Format:

Save all records?

Yes   No   Cancel
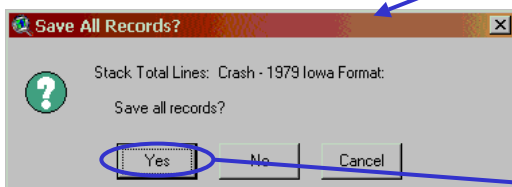
SAVER will ask you if you wish to save all records (i.e., the entire theme). This is usually the case.

Click Yes.
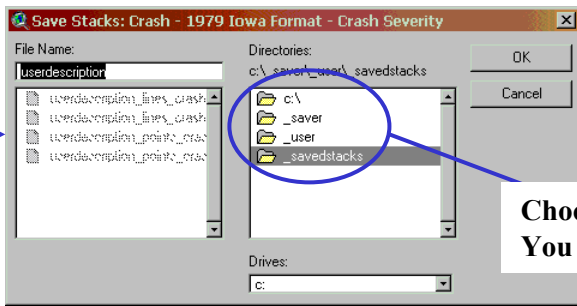
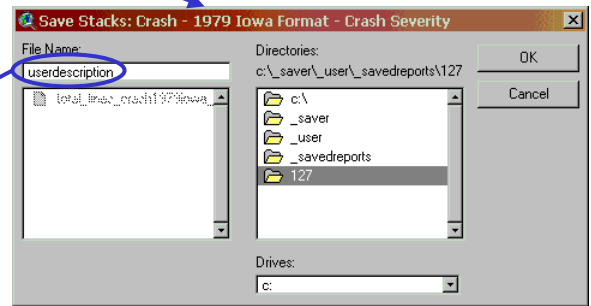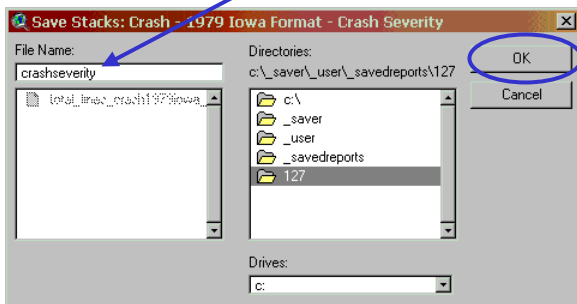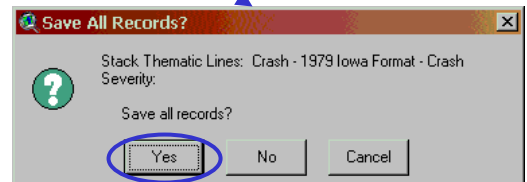**SAVER will progress to saving the other stacked themes in the list.**

Choose SAVE directory. You may use the default.

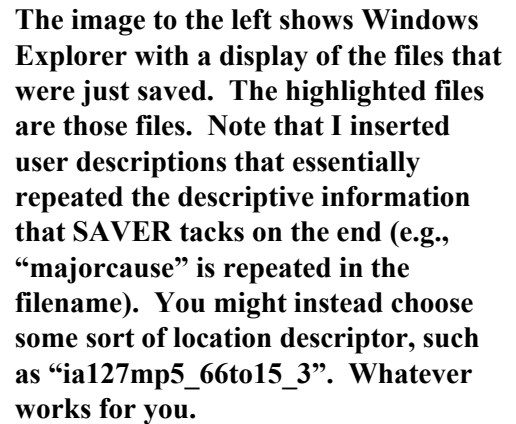**Specify SAVE name. Using the default is not advised.**

Click OK.

Click Yes.

This page will essentially repeat for the remaining stacked themes that you chose to save.

When all are saved.

SAVER Example

The image to the left shows Windows Explorer with a display of the files that were just saved. The highlighted files are those files. Note that I inserted user descriptions that essentially repeated the descriptive information that SAVER tacks on the end (e.g., "majorcause" is repeated in the filename). You might instead choose some sort of location descriptor, such as "ia127mp5_66to15_3". Whatever works for you.

If you didn't save the files into a subdirectory reserved for the current analysis, you could copy and paste these files into one for that purpose now.

Next, we'll want to remove the current stack themes from the view. These stack themes are only temporary, they will be erased from the system the next time you open SAVER. To have them appear properly next time you open this project, we'll need to open those themes that you saved in the previous steps.
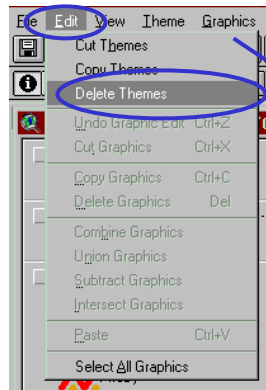

Set all stack themes active.

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SAVER Example

To delete the temporary stacked themes, you have two options: 1) use SAVER's Remove stacks option or 2) use ArcView's Delete Themes option.
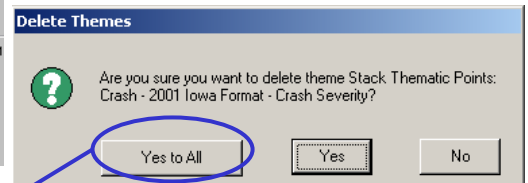
Display
- Activate/Show: All Data
- Crash Data | Road Data
- Stack | Exp...
- Collision Diagr...
- Map Feature Labels: Label | Remove
- Zoom In | Zoom Out
- Add Theme | Delete Theme
- Rename Map | Refresh Map

1. Click Stack in the Display dialog panel.

Stack
- Create: Run | Batch
- Thematic | Totals
- Remove | Revise
- Stack Selections: Save | Load
- Stack Themes: Export | Add

Click Remove.

Edit menu:
- Cut Themes
- Copy Themes
- Delete Themes
- Undo Graphic Edit   Ctrl+Z
- Cut Graphics   Ctrl+X
- Copy Graphics   Ctrl+C
- Delete Graphics   Del
- Combine Graphics
- Union Graphics
- Subtract Graphics
- Intersect Graphics
- Paste   Ctrl+V
- Select All Graphics

2. Under the Edit menu, choose Delete Themes. A dialog that ensures that you are doing what you want appears.

Delete Themes

Are you sure you want to delete theme Stack Thematic Points: Crash - 2001 Iowa Format - Crash Severity?

Yes to All | Yes | No

Click Yes to All.
This will delete all active themes. If there are themes you don't wish to delete, click either Yes or No (as appropriate) for each theme.

Counties: Harrison   (10/01/2003 22:06:39)

- 1996 Harrison Crashes
- 1997 Harrison Crashes
- 1998 Harrison Crashes
- 1999 Harrison Crashes
- 2000 Harrison Crashes
- Harrison Townships
- Harrison Roads
- Harrison Rivers
- Harrison Rail
- Harrison Public Land Survey Sections
- Harrison Mileposts
- Harrison Lakes
- Harrison Nodes
- Harrison Corporate Limits

All stacked themes should disappear.

Now you need to add those saved stacked themes that you want in the view.

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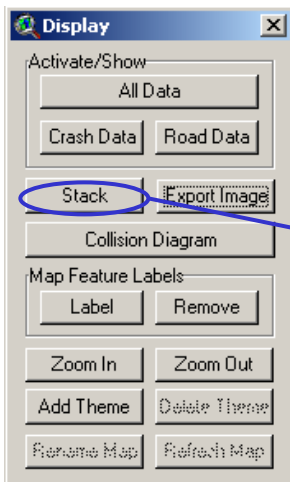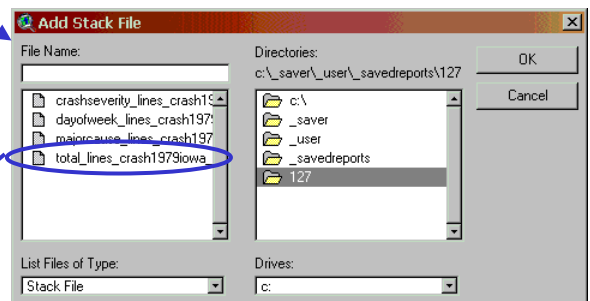
SAVER Example

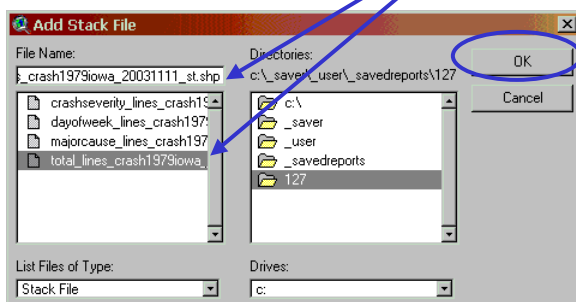**To open the stacks that were saved in the previous step, click Stack in the Display dialog panel.**
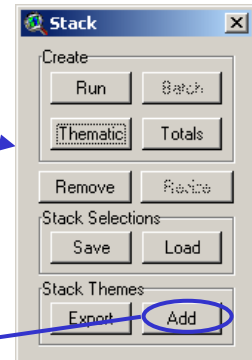
Click Add in the Stack Themes control panel.
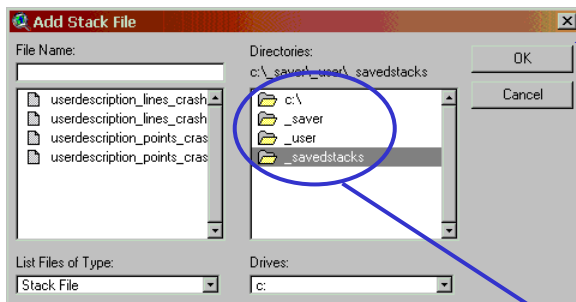
Find the folder where the stacks are saved.
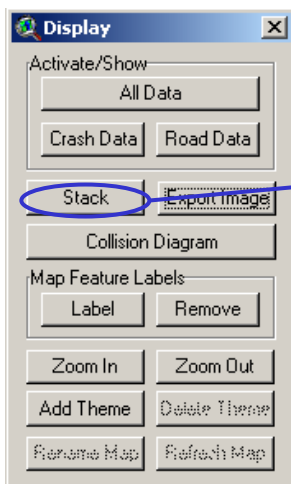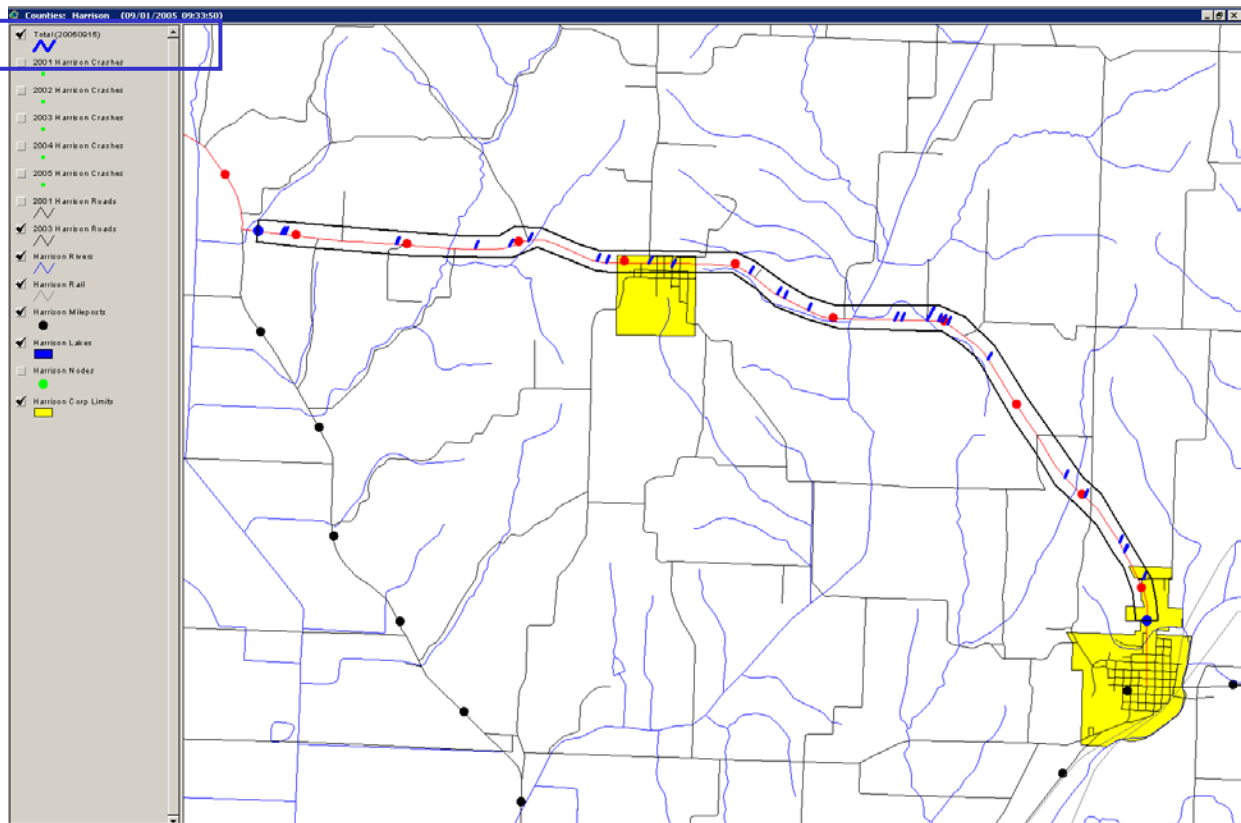
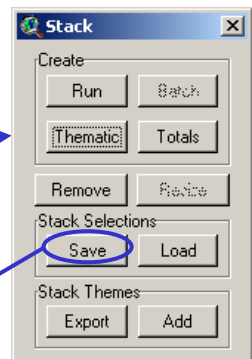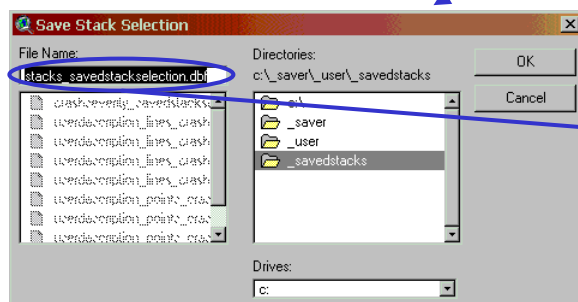**Select the stack(s) you would like to view.**
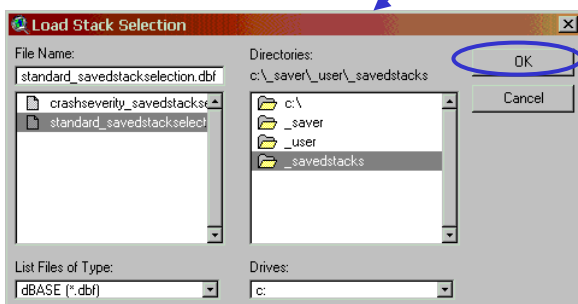
Click OK.

SAVER Example

To save the Stack Selection, click Stack in the Display dialog panel.

Click Save in the Stack Selections control panel. This will bring up a Save File dialog. Choose the directory where you would like to save the Stack Selection. You may use the default if you wish.

Give an appropriate name to the Stack Selection.

SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005
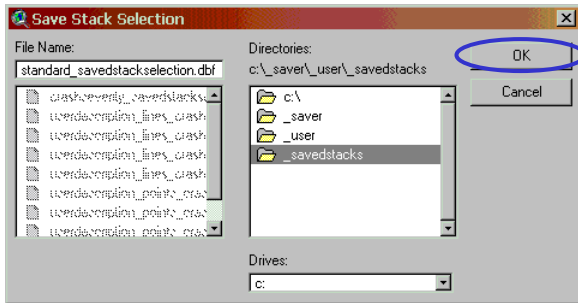
Click OK. This Stack Selection is now saved to use on future crash analysis.
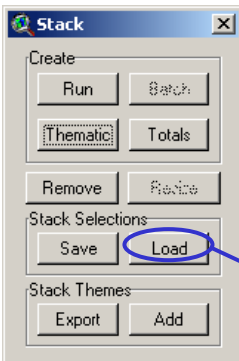
To load a saved Stack Selection, click Stack in the Display dialog panel.
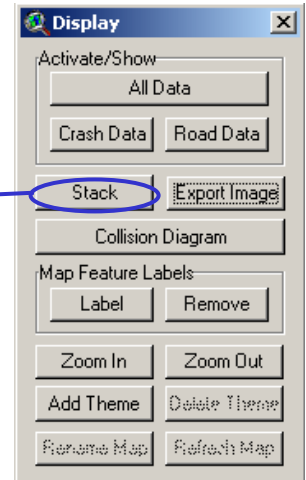
Click Load in the Stack Selections control panel. This will bring up a Load File dialog. Navigate to the directory where you saved the Stack Selection.
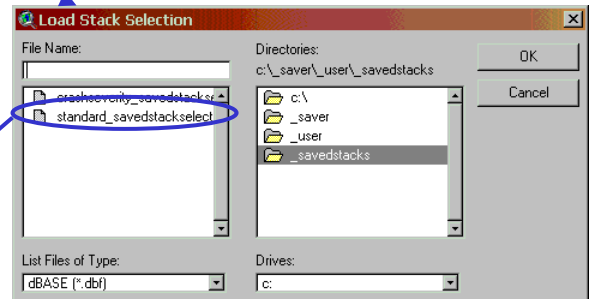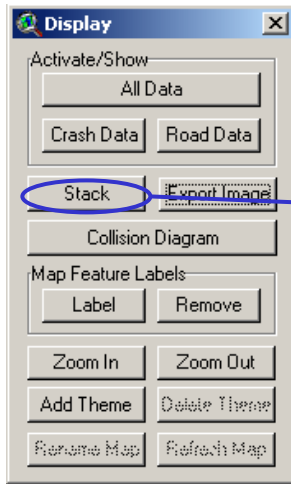
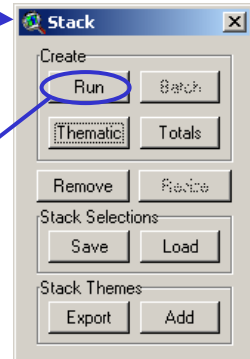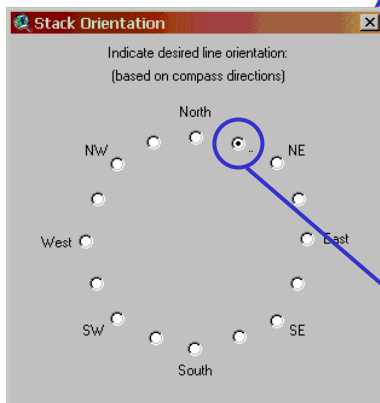**Select the Stack Selection that was previously saved.**

Click OK.

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SAVER Example

Make all the desired crash themes active.

Click Stack in the Display dialog panel.

Click Run in the Create Stack panel.

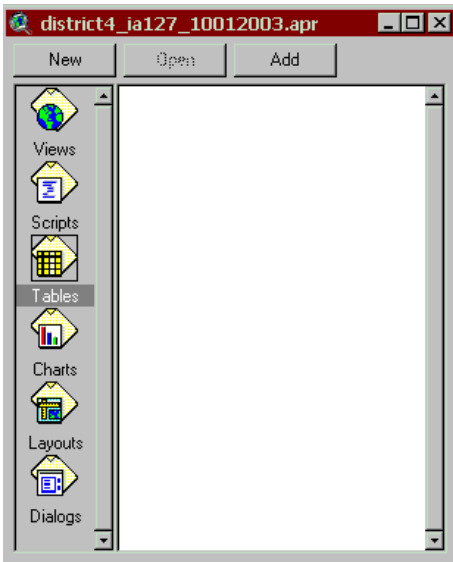**Select a stack orientation perpendicular (I.e., at right-angles) to the primary road direction…or as near as you can get to this as many roads have curves.**

SAVER will then run and produce all of the stacks that are in the selected Stack Selection.
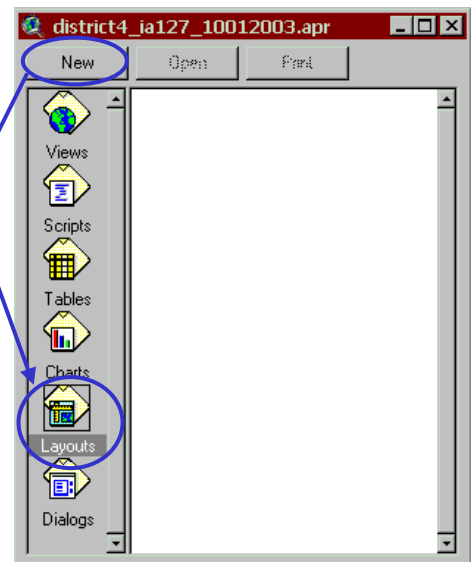
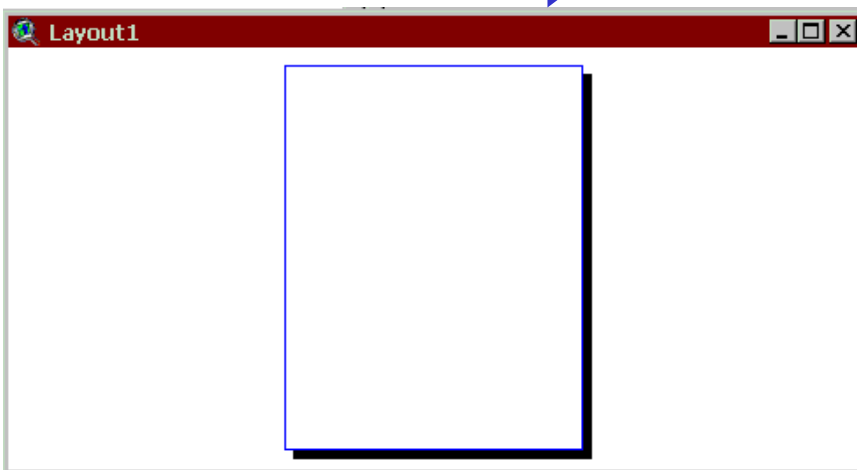# Layouts

SAVER Example

Go to the ArcView Project Window.
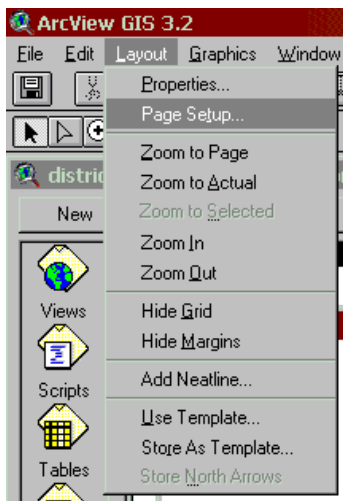
Select Layouts from the menu on the left side.

Click New.

This brings up a new layout in a new window. It is a good idea to make this window larger so that you can get a better idea of how things will look before printing them.
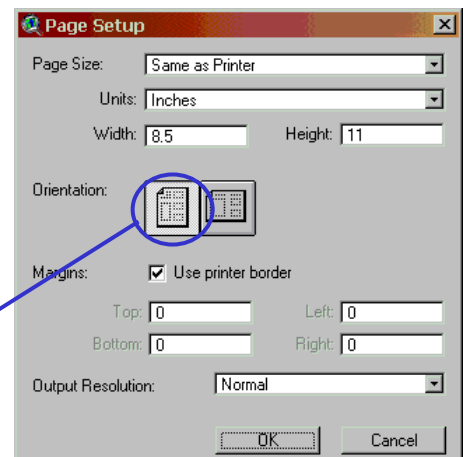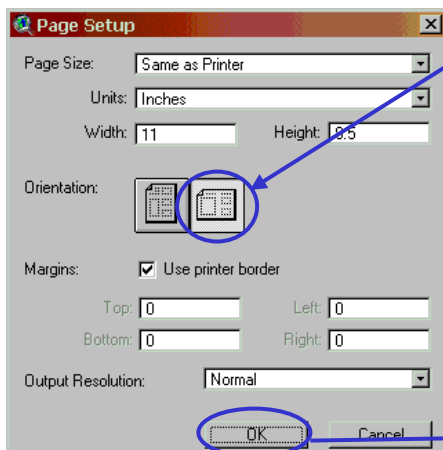
SAVER Example

Select Page Setup from the Layout pull-down menu.

Switch the Orientation from Portrait to Landscape.

Click OK.
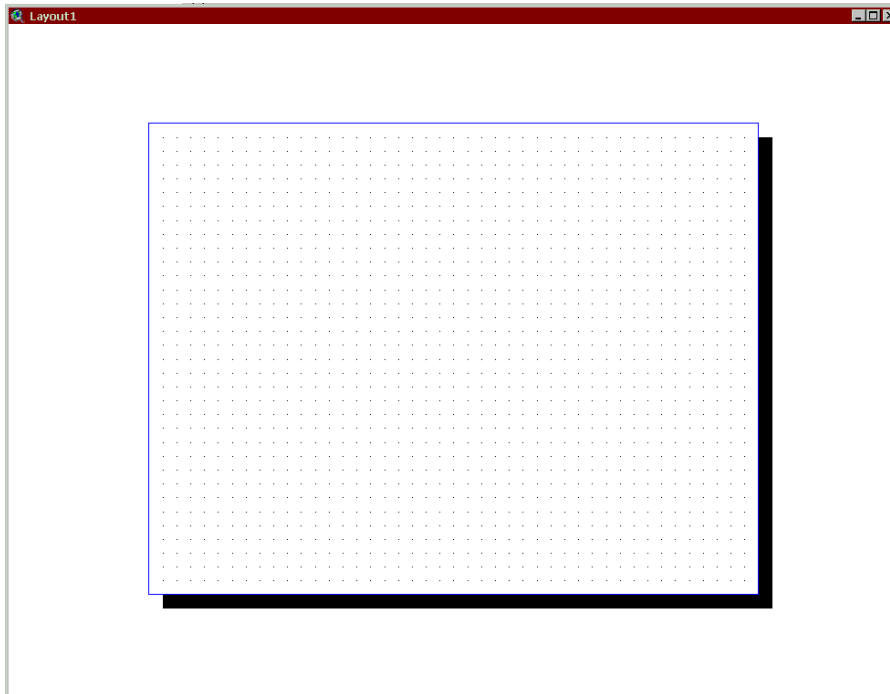
Select Zoom to Page tool button. This will zoom in so that the layout fills up the entire layout window.

View Frame

Select the View Frame tool button. (Make sure the button is depressed.)

View Frame
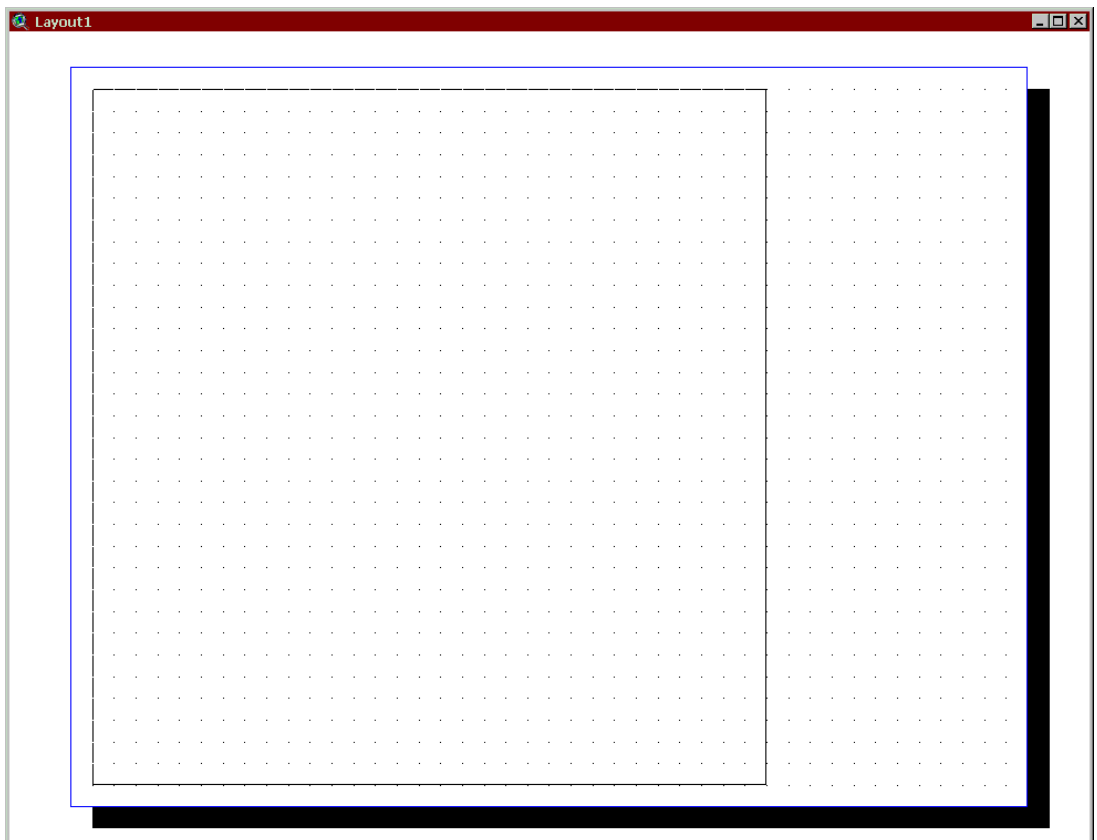Legend Frame
Scale Bar Frame
North Arrow
Chart Frame
Table Frame
Picture Frame

View Frame

Click and drag a rectangle. This rectangle is where your previously created map will be on the page. It is probably a good idea to leave some space at the top or along one side as shown here for a title, legend, scale, and other necessary information.
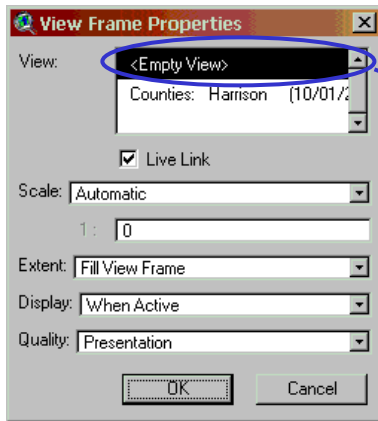
Layout1

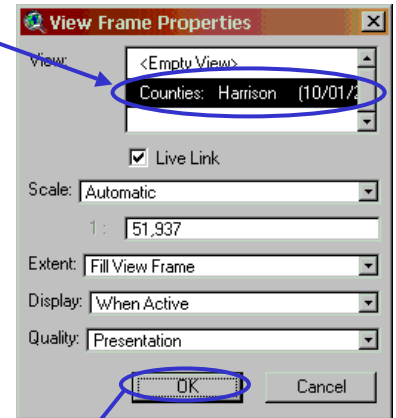**After you draw the rectangle, the View Frame Properties dialog box comes up.**

SAVER Example

View Frame Properties

View: <Empty View>
Counties: Harrison (10/01/2

☑ Live Link

Scale: Automatic
1: 0
Extent: Fill View Frame
Display: When Active
Quality: Presentation

OK   Cancel

Click on the line that represents the project that you are working on.

View Frame Properties

View: <Empty View>
Counties: Harrison (10/01/2

☑ Live Link

Scale: Automatic
1: 51,937
Extent: Fill View Frame
Display: When Active
Quality: Presentation

OK   Cancel

Click OK.

The map then shows up in the previously created frame.

Layout1
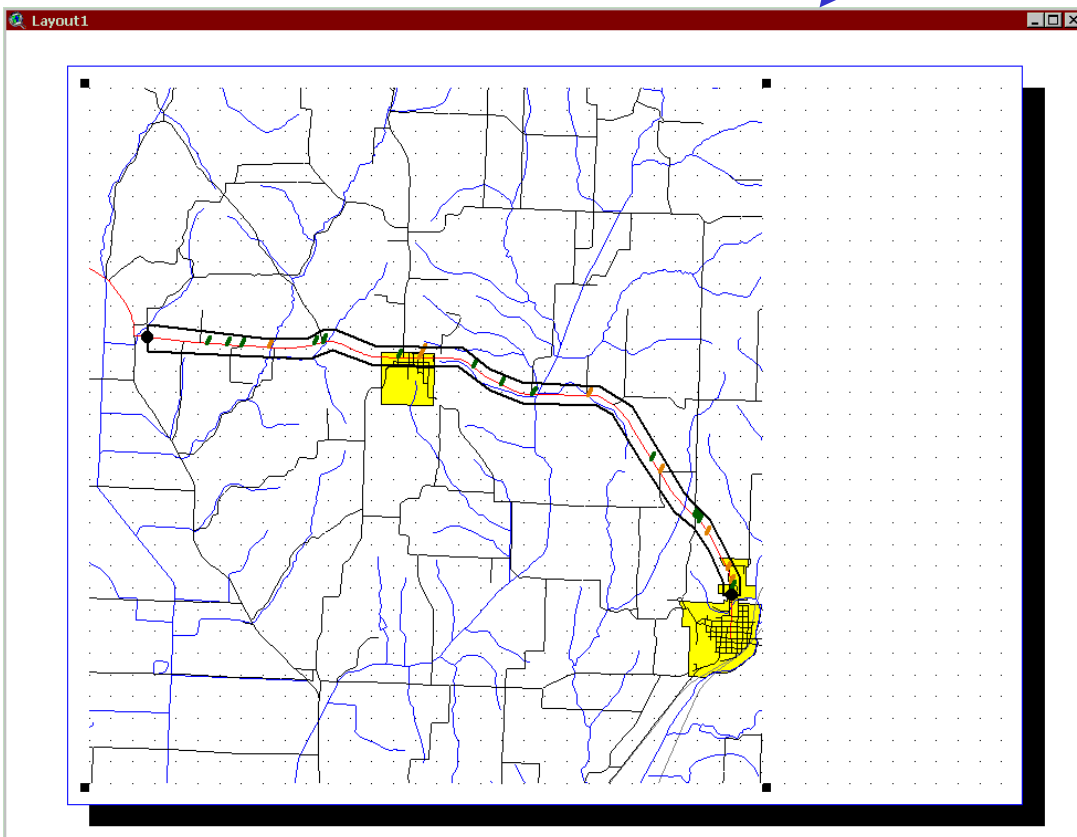
SAVER Example

IA 127, MP 5.66 to MP 15.3,
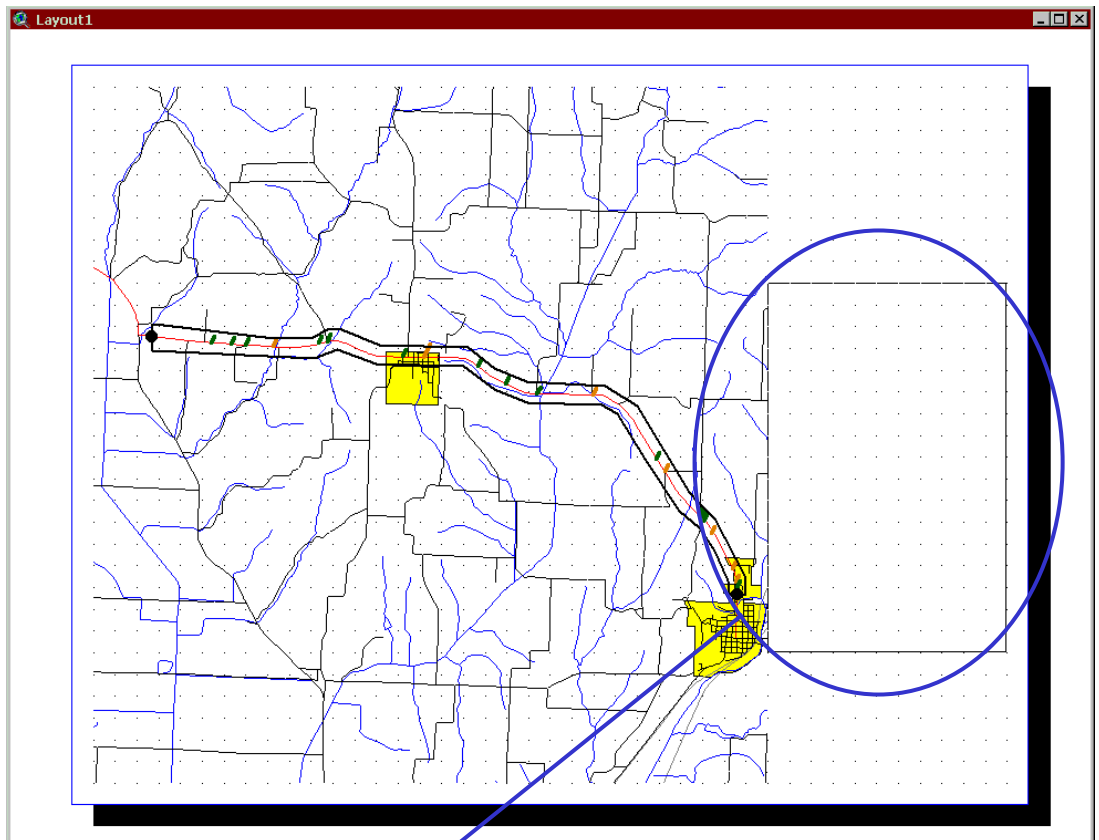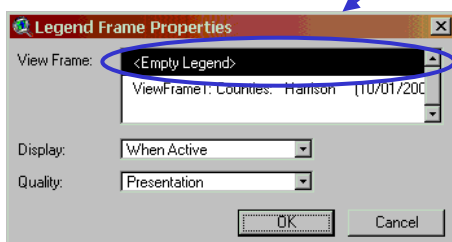Harrison County, 2001-2005

Now we will add a Legend.

View Frame

Select the Legend Frame tool button. This is on the View Frame button pull down menu. (Make sure the button is depressed.)

Legend Frame

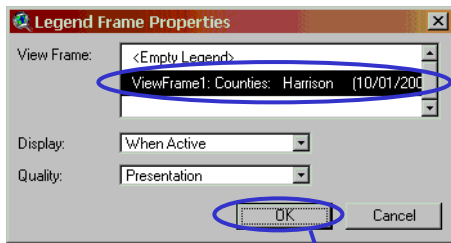**Click and drag a rectangle where you want your legend to be in the layout.**

Layout1

This brings up the Legend Frame Properties dialog box.

Legend Frame Properties

View Frame:	<Empty Legend>
	ViewFrame1: Counties: Harrison [10/01/200
Display:	When Active
Quality:	Presentation

OK   Cancel

Click on the line that represents the project you are working on.

SAVER Example

Legend Frame Properties

View Frame:
<Empty Legend>
ViewFrame1: Counties: Harrison (10/01/200

Display: When Active
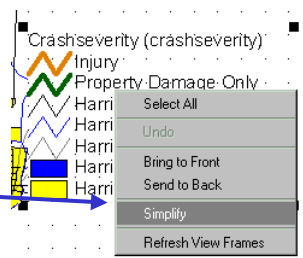Quality: Presentation

OK   Cancel

Click OK.

A legend will show up that includes all of the features that are displayed on the map. All of the themes that are listed along the left side of the screen in ArcView will be brought into the legend. This is probably more information than we need or want in our Legend.
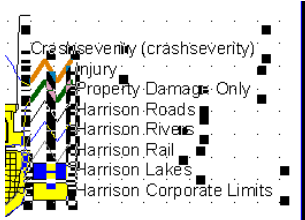
Layout1

Crashseverity (crashseverity)
Injury
Property Damage Only
Harrison Roads
Harrison Rivers
Harrison Rail
Harrison Lakes
Harrison Corporate Limits
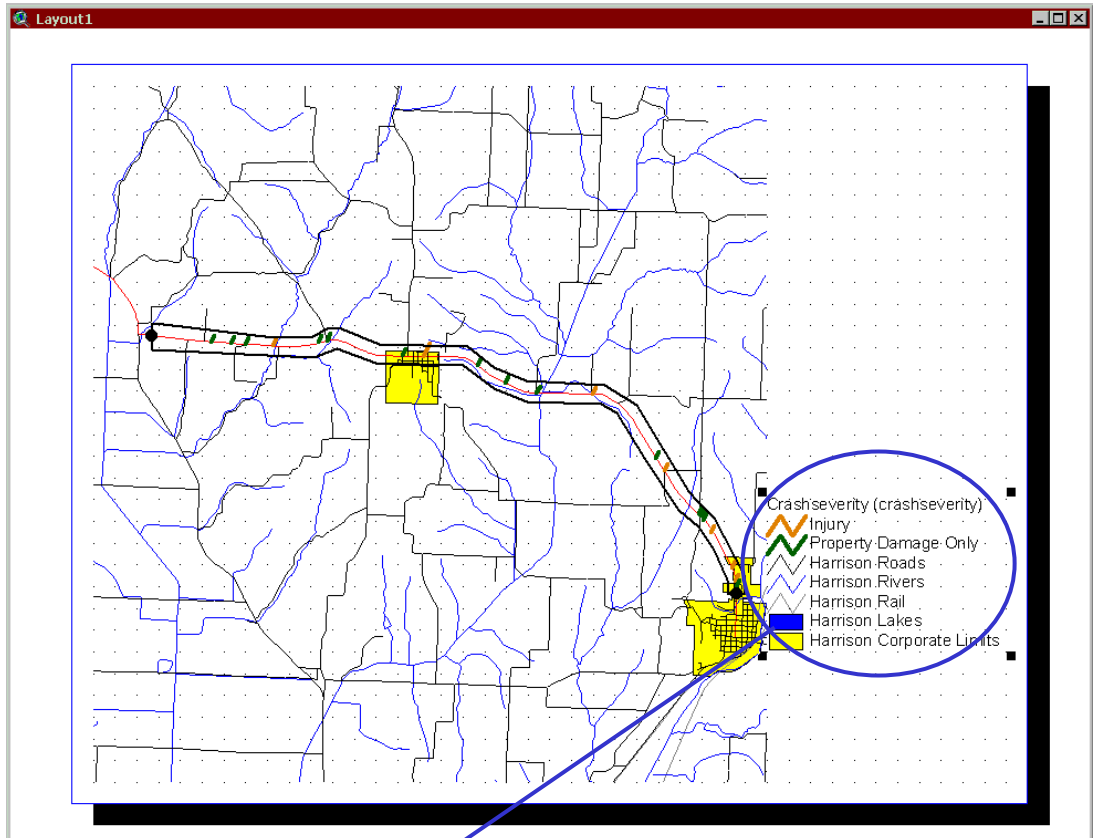
Select the arrow tool.

Right-click on the legend and select Simplify.

Crashseverity (crashseverity)
Injury
Property Damage Only
Harri   Select All
Harri   Undo
Harri   Bring to Front
Harri   Send to Back
Harri   Simplify
         Refresh View Frames

SAVER Example
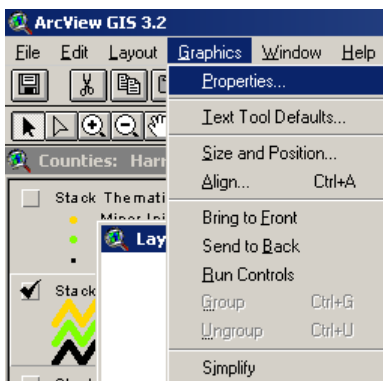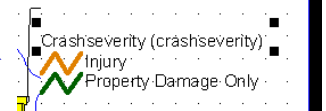
All of the items in the legend should be selected. You can then hold down the Shift-key and unselect any of the items that are not needed in the key.
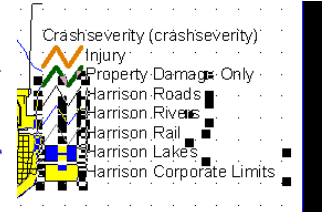
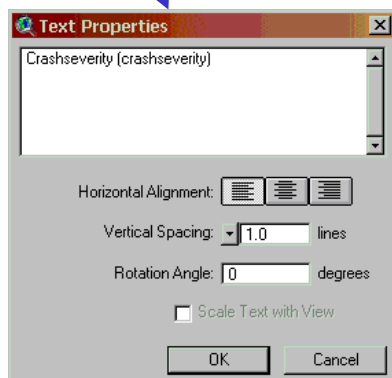**Then delete the items still selected by pressing the Delete-key.**
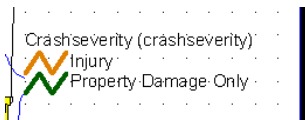
Then select the title for the legend.

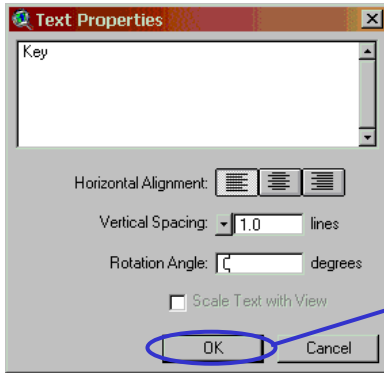**Select Properties from the Graphics pull-down menu.**

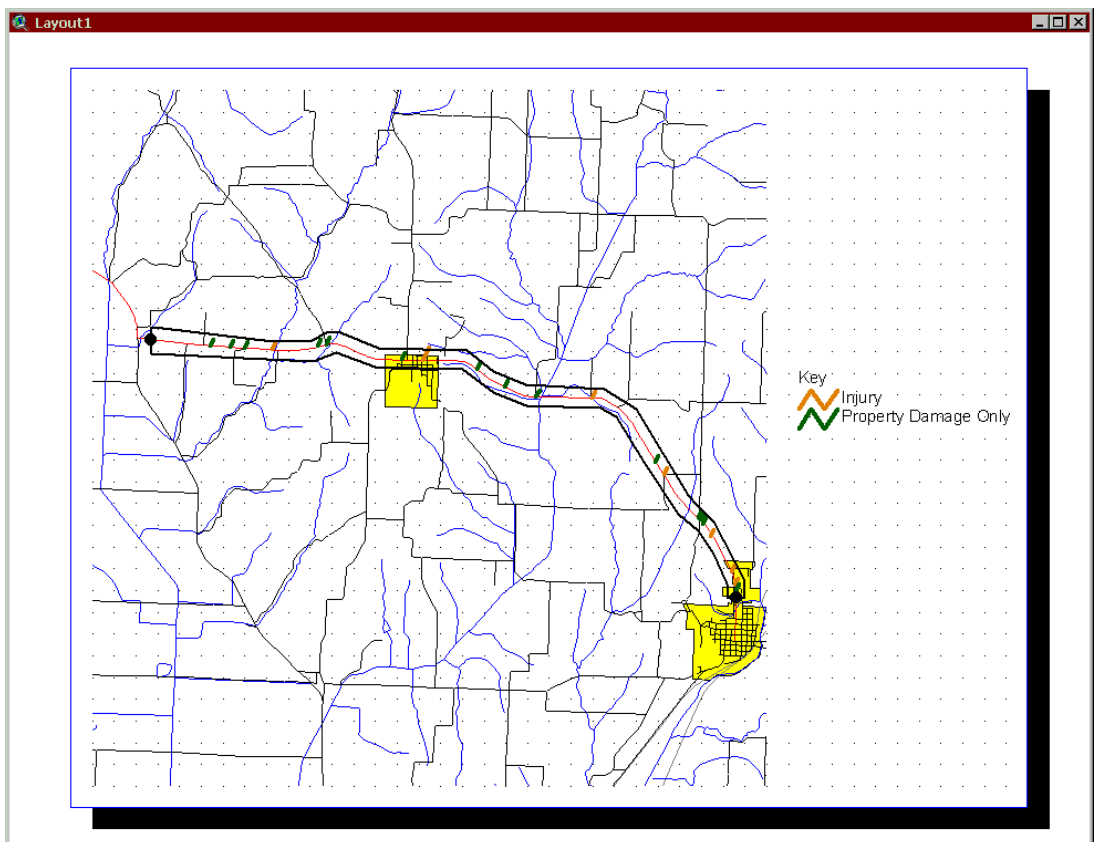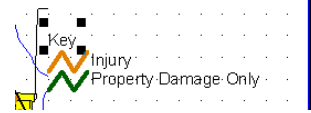**This brings up the Text Properties dialog box.**

Change the title of the legend to something more appropriate such as "Key" or "Legend."

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SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005

Text Properties

Key

Horizontal Alignment:

Vertical Spacing: 1.0 lines

Rotation Angle: 0 degrees

☐ Scale Text with View

OK   Cancel

Click OK.

Key
Injury
Property Damage Only

Layout1

Key
Injury
Property Damage Only

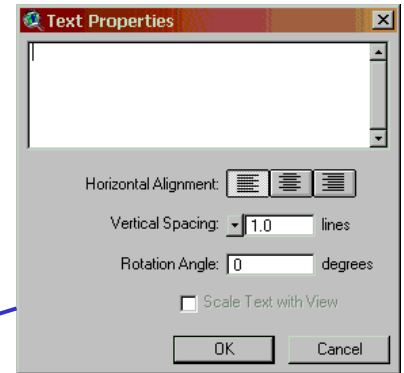**Now we will add a title to our layout.**

Select the Drop-Shadow tool button. This is on the Text button pull down menu. (Make sure the button is depressed.)
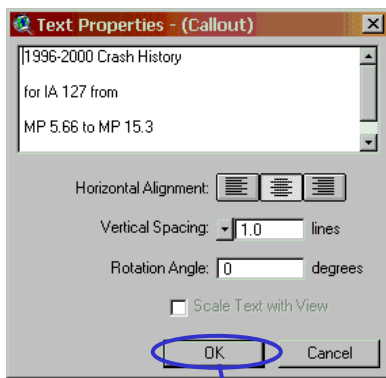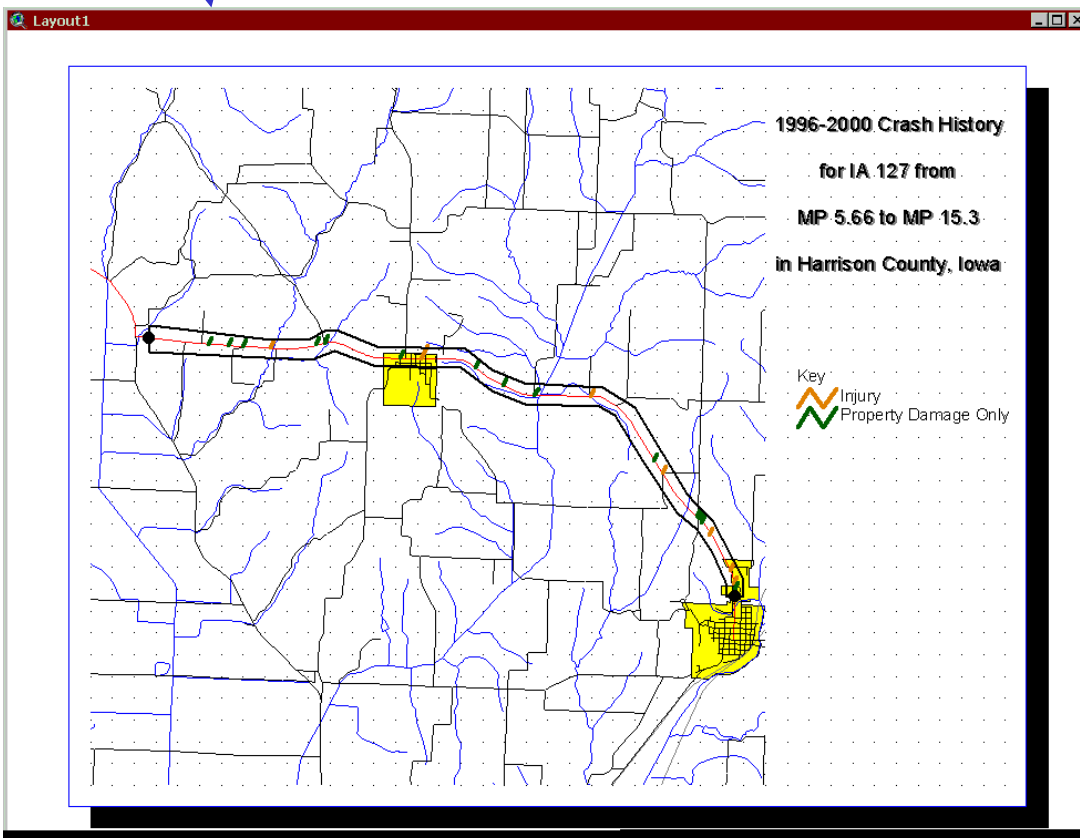
Drop-Shadow Text

SAVER Example

Click on the layout where you want the title of the layout. Location is not real important as it can be moved later if necessary using the pointer tool. This will bring up the Text Properties dialog box.

Text Properties

Horizontal Alignment:
Vertical Spacing: 1.0 lines
Rotation Angle: 0 degrees
☐ Scale Text with View
OK   Cancel

Type in an appropriate title for the layout. The information from the Feature Count Report is okay. This can also be formatted by changing the horizontal alignment or the vertical spacing.

Text Properties - (Callout)

1996-2000 Crash History
for IA 127 from
MP 5.66 to MP 15.3

Horizontal Alignment:
Vertical Spacing: 1.0 lines
Rotation Angle: 0 degrees
☐ Scale Text with View
OK   Cancel

Click OK.

Layout1

1996-2000 Crash History
for IA 127 from
MP 5.66 to MP 15.3
in Harrison County, Iowa

Key
Injury
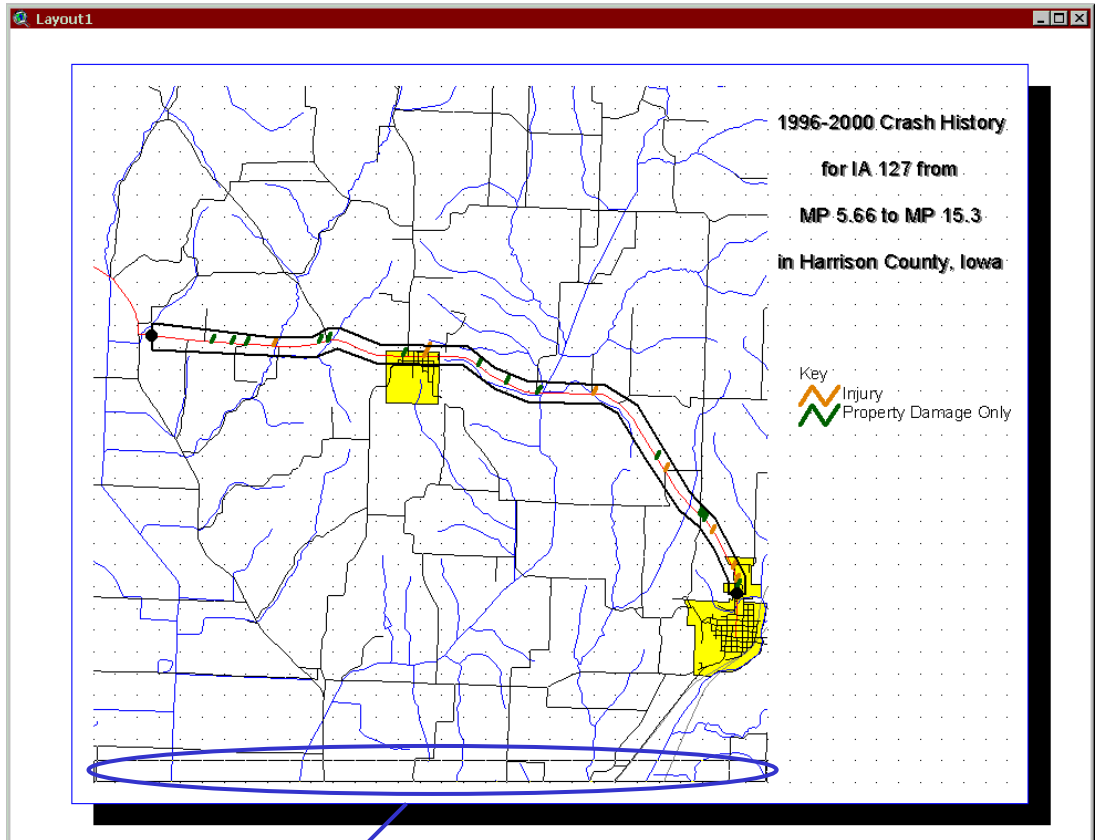Property Damage Only

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SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005

Now we will add a scale bar to our layout.

**Select the Scale Bar Frame tool button.
This is on the same button pull down
menu as the View Frame and Legend
Frame buttons. (Make sure the button
is depressed.)**

Scale Bar Frame

**Click and drag a rectangle where you would
like to place the Scale Bar. This will bring
up the Scale Bar Properties dialog box.**

Scale Bar Properties dialog
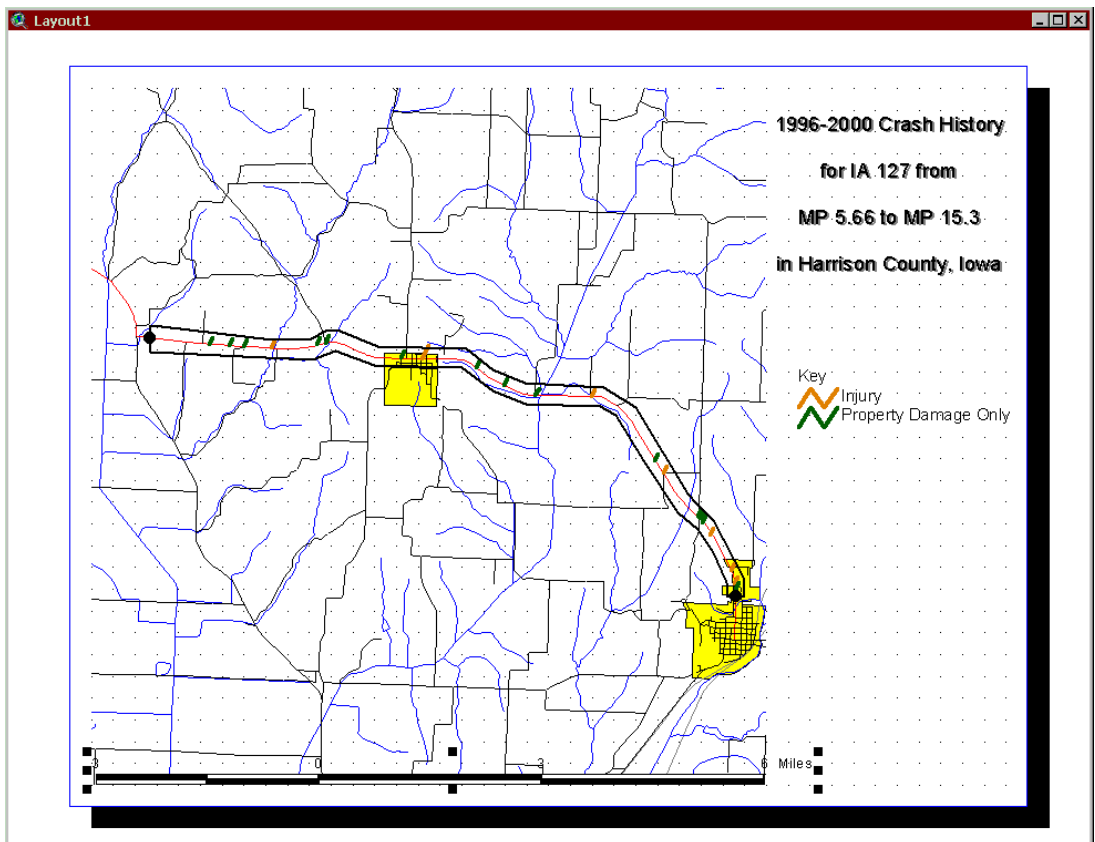

SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005
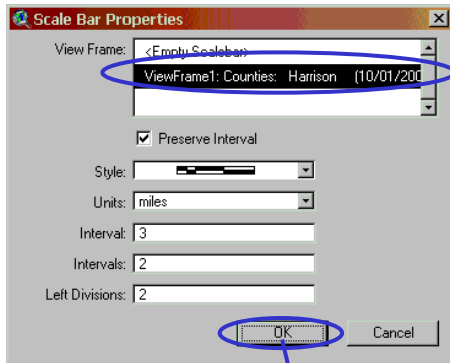
Click on the line that represents the project you are working on. Pick the style of scale bar that you want and change any options as necessary to fit your needs.
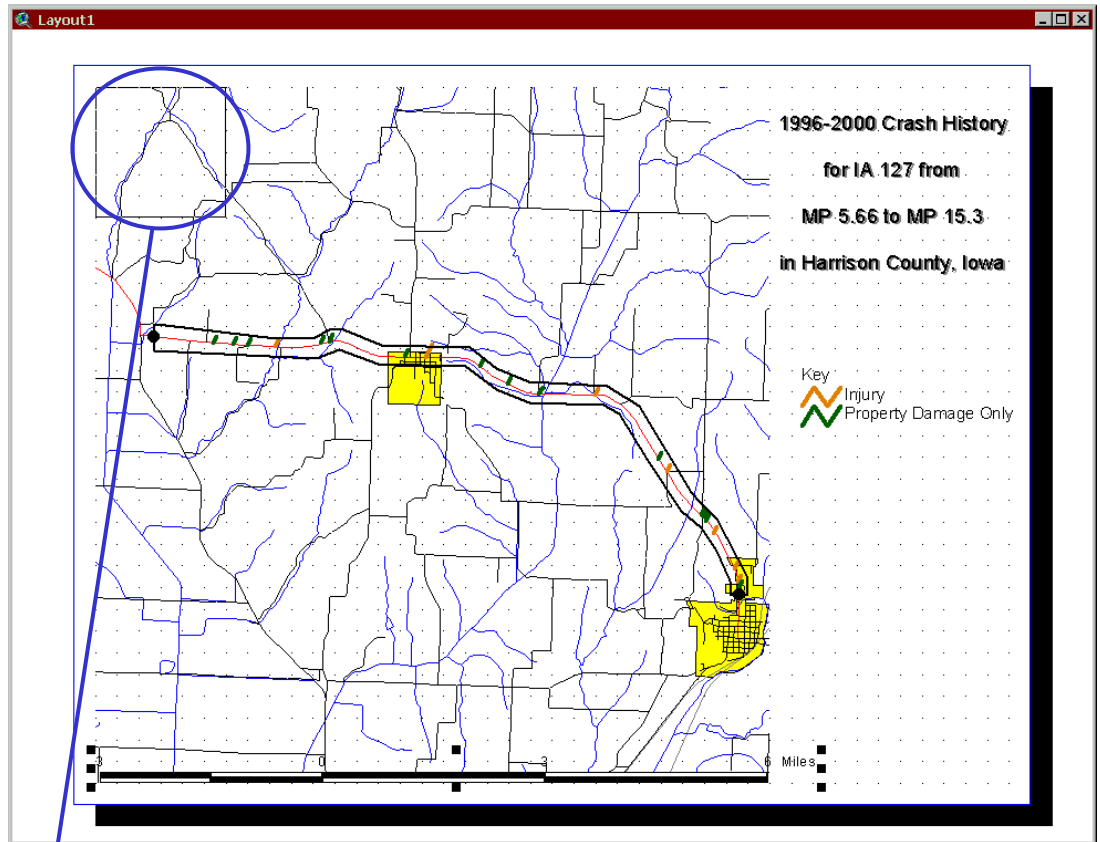
Click OK.

SAVER Example

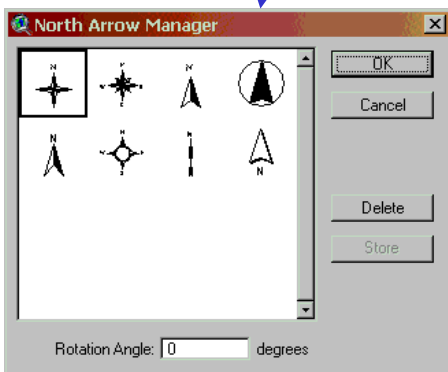**Now we will add a North Arrow to our layout.**

Select the North Arrow tool button. This is on the same button pull down menu as the View Frame and Legend Frame buttons. (Make sure the button is depressed.)
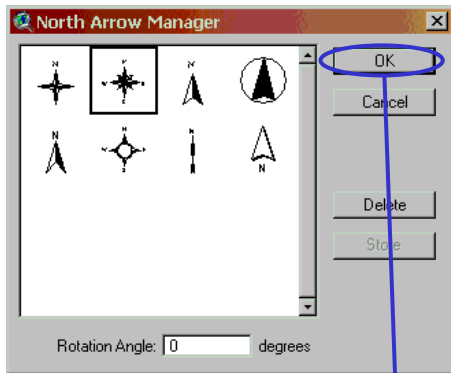

Click and drag a rectangle where you would like to place the North Arrow. This will bring up the North Arrow Properties dialog box.
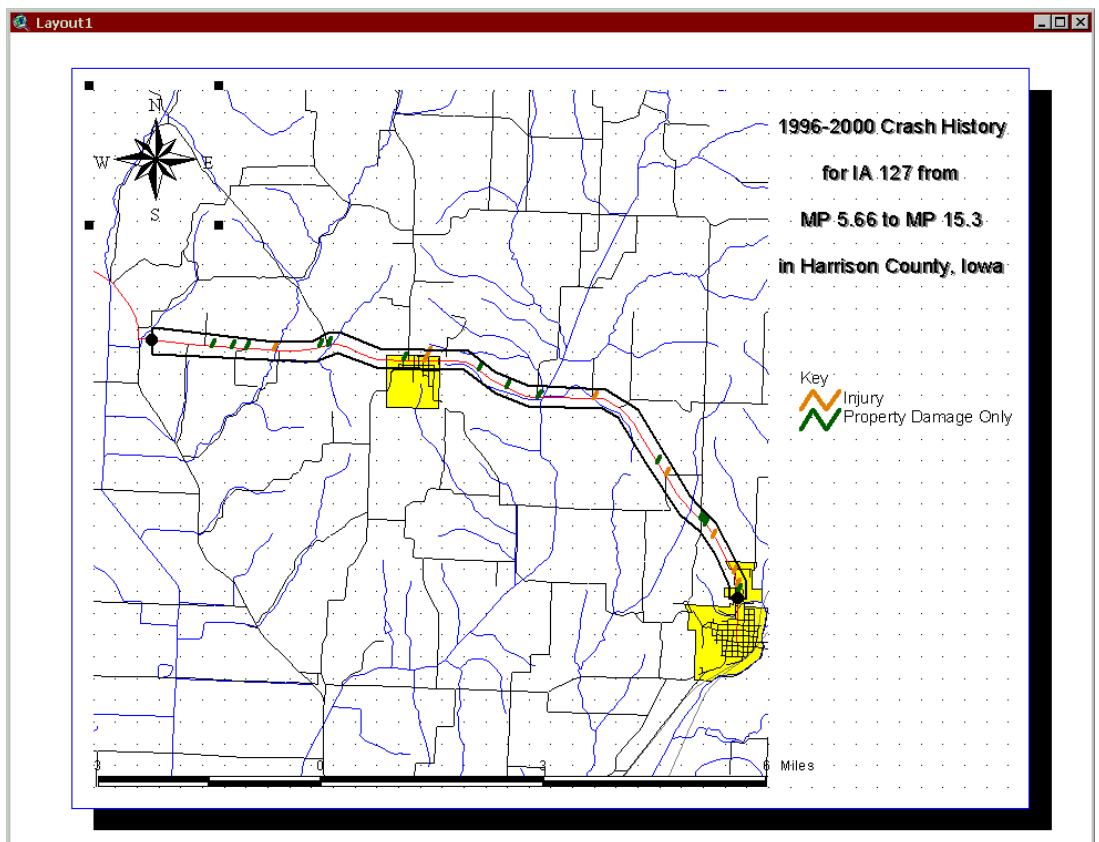

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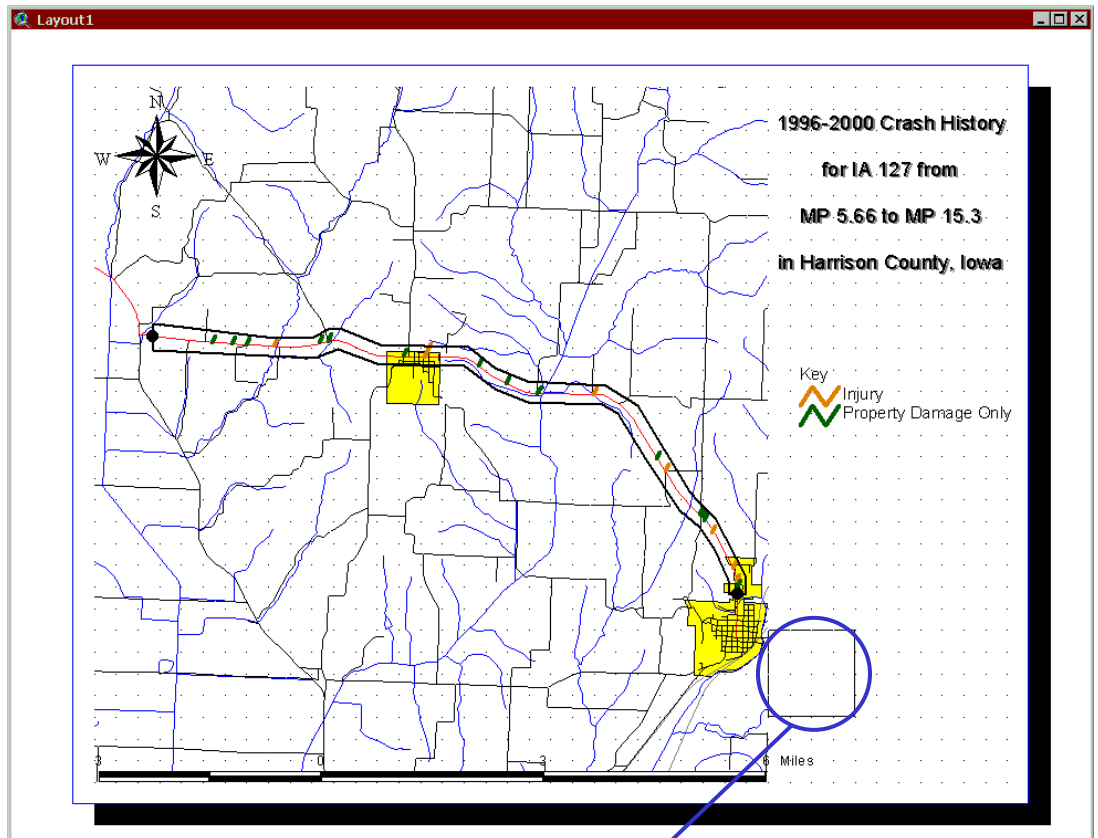**Select the North Arrow that you want and click OK.**

SAVER Example

IA 127, MP 5.66 to MP 15.3, Harrison County, 2001-2005

Now a DOT graphic will be added to the layout. This is optional and any graphic that you desire could be inserted instead.
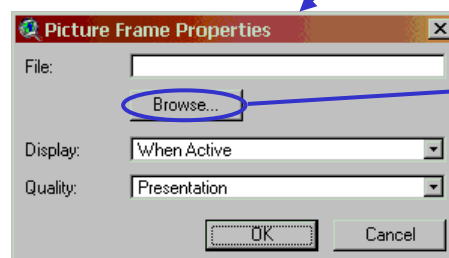
Select the Picture Frame tool button. This is on the same button pull down menu as the View Frame and Legend Frame buttons. (Make sure the button is depressed.)

Picture Frame

Layout1

1996-2000 Crash History

for IA 127 from

MP 5.66 to MP 15.3

in Harrison County, Iowa

Key
Injury
Property Damage Only

Miles

Click and drag a rectangle where you would like to place the graphic. This will bring up the Picture Frame Properties dialog box.

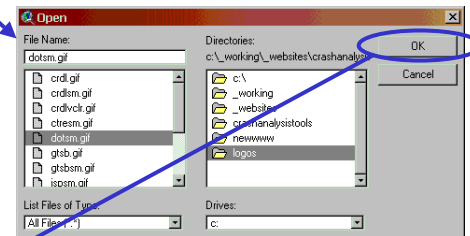**Picture Frame Properties**

File:

Browse...

Click Browse.

Display: When Active

Quality: Presentation

OK   Cancel
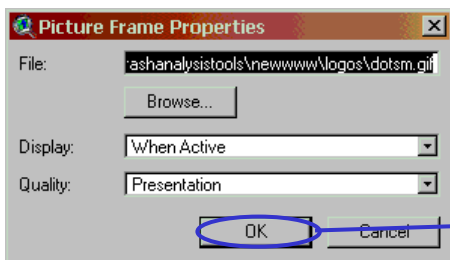
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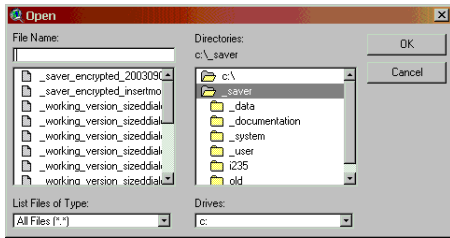
SAVER Example

This brings up a dialog box.

**Navigate to the folder where
the logo is located at.**

Click OK.

Picture Frame Properties

File: ashanalysistools\newwww\logos\dotsm.gif

Browse...

Display: When Active

Quality: Presentation

OK   Cancel

Click OK.

Now we will add some information about who made the map and the date.

Select the Text tool button. (Make sure the button is depressed.)

Click on the layout where you would like the text to go. The exact location is not important as it can be moved later if necessary using the pointer tool. This will bring up the Text Properties dialog box.
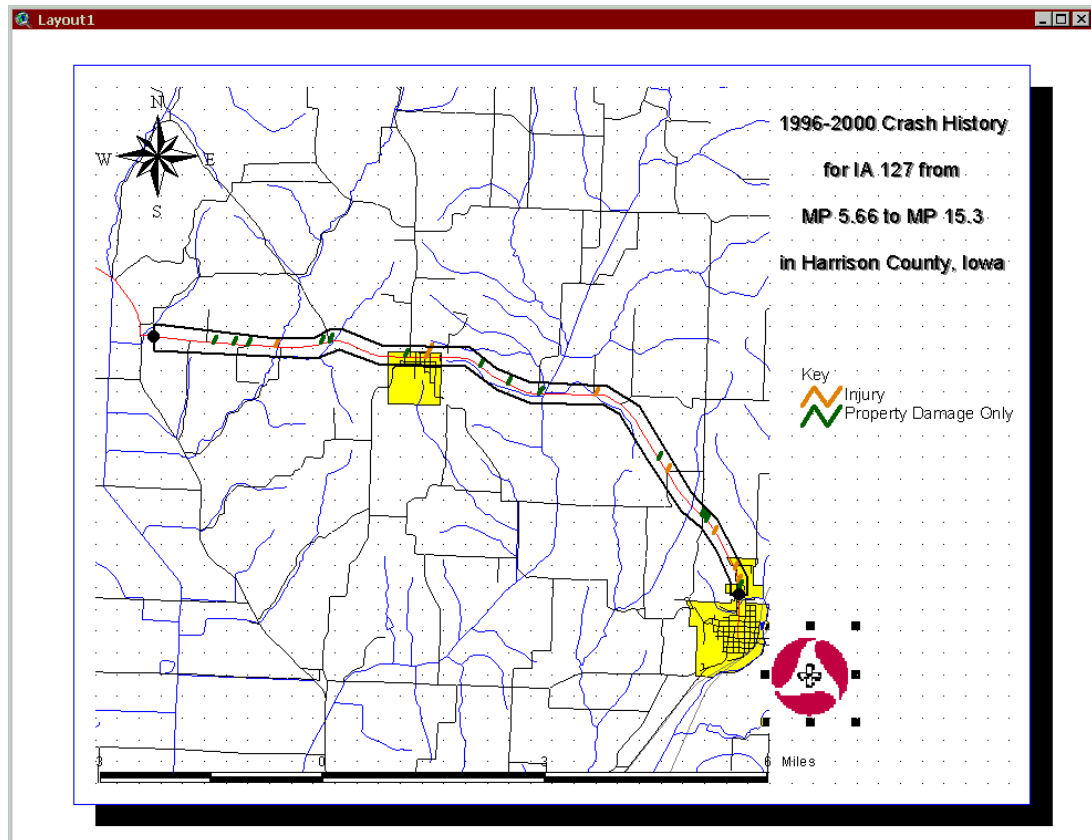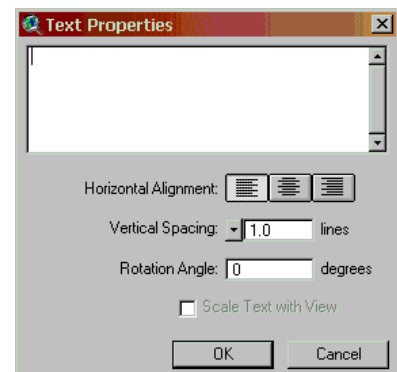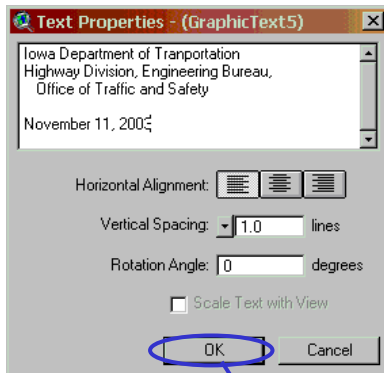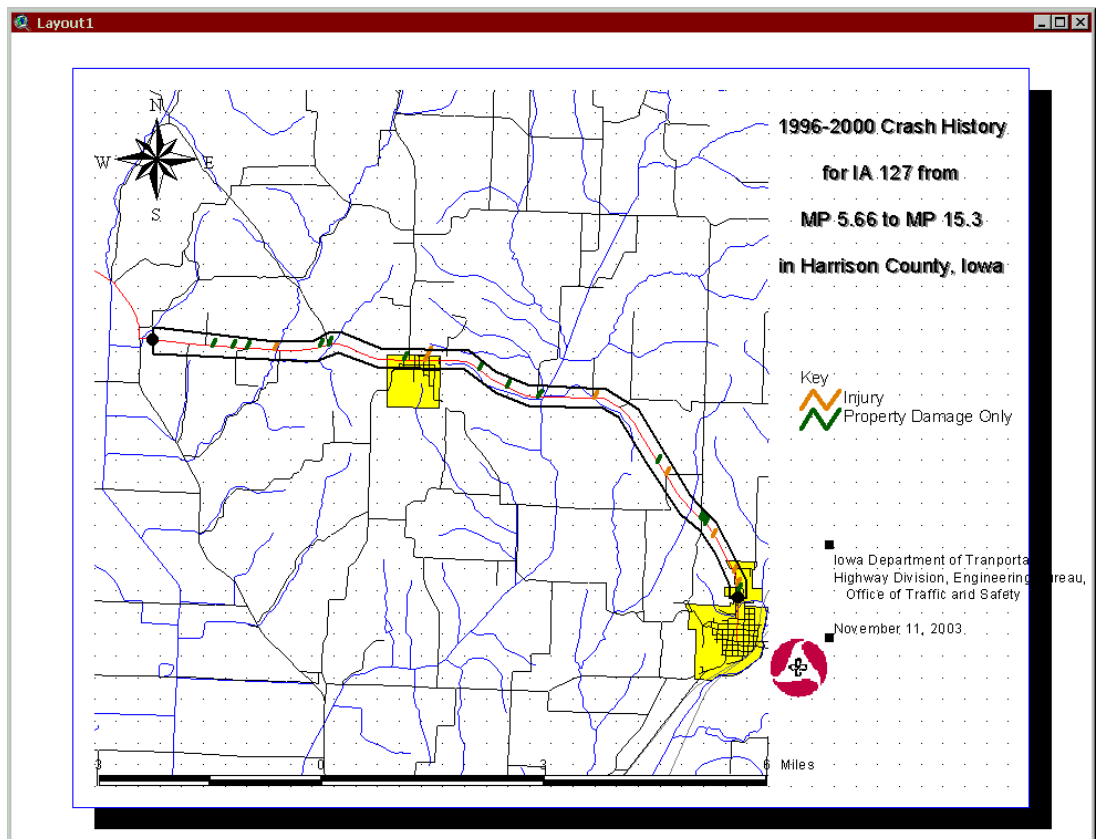
SAVER Example

IA 127, MP 5.66 to MP 15.3,
Harrison County, 2001-2005

Type the text into the dialog box. Your name, office, and the date the map was created are some suggestions for what to include. You can put in more or less information as you see fit.


Text Properties - (GraphicText5)

Iowa Department of Tranportation
Highway Division, Engineering Bureau,
Office of Traffic and Safety

November 11, 2003

Horizontal Alignment:
Vertical Spacing: 1.0 lines
Rotation Angle: 0 degrees
☐ Scale Text with View
OK   Cancel

Click OK.

Layout1

1996-2000 Crash History
for IA 127 from
MP 5.66 to MP 15.3
in Harrison County, Iowa

Key
Injury
Property Damage Only

Iowa Department of Tranporta...
Highway Division, Engineering...reau,
Office of Traffic and Safety

November 11, 2003

Miles

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SAVER Example

The layout is now complete with all of the necessary information. This could be printed from Arcview or exported to use in a presentation.
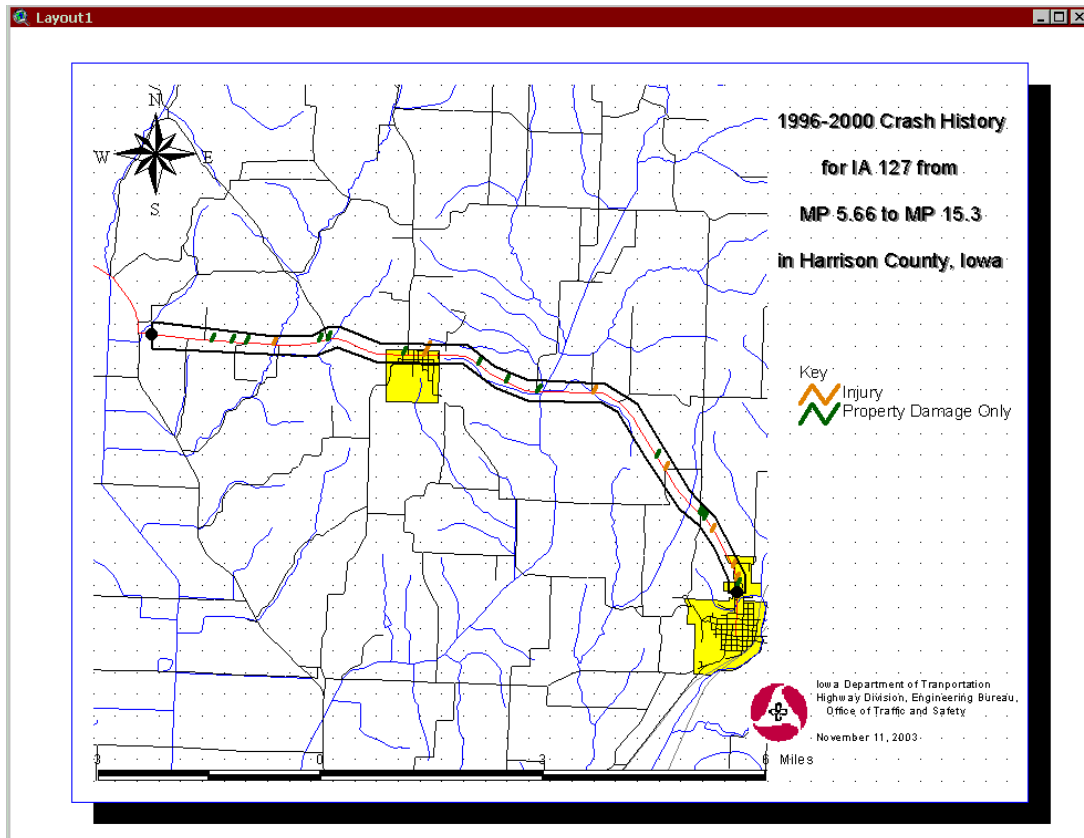
To export the image select Export from the Graphics pull-down menu.
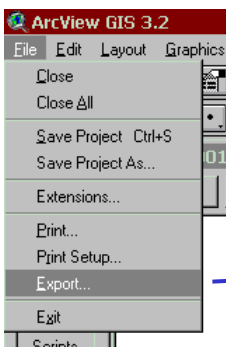
This brings up the Export dialog box. Navigate to the location where you would like to save the image. You can also pick what format you would like to save the image as. Most often, JPEG images are small in file size so are relatively easy to transfer but they also often have sufficient image quality. The JPEG choice is at the bottom of the choices. Use whatever you wish, however.

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